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My Experience With American Foulbrood

By O. H. Schmidt
Michigan

I REMEMBER vividly and distinctly the discussion of American Foulbrood at the first meeting of beekeepers I ever attended, the International meeting at Detroit in 1904. It occupied a good share of the program and was ably handled by such men as Dr. Phillips, Wm. McEvoy, N. E. France, etc.

This topic seems to stick to our convention programs as tenaciously as life does to the organism that causes the trouble. At that meeting a sample of comb containing scales was passed around so everybody could see it and when Dr. Phillips got through telling of the inability of chemicals tried up to that time, the difficulty of making the germs even feel bad to say nothing of the inability to kill them, he ended up by stating that a half hour of boiling is necessary if the organism is to be really killed.

Then one man in the audience stood up and said he had handled the diseased comb that had been passed around and would like to know what he could do so he could safely handle his own bees when he got back home and, as if the audience had been one person, they roared back, "Wash them!"

This seemed inconsistent then, just as some of the things today seem inconsistent perhaps because we know of no better way under certain circumstances.

For many years after this meeting I did not again see a cell of American Foulbrood. This happy state of affairs went on until one day when I was clipping queens in the spring I came across one cell about which there could be no doubt and it was on such a perfect comb of brood that I had taken time to admire the brood.

This yard was given a thorough inspection and two more colonies located. Ten days later two more were found and ten days after that another one. All of them were moved out of the yard in the evening of the day that they were found, a number of miles to my brother's place and there burned. This ended the trouble in that yard for good and the disease has not showed itself in that yard to this day.

I then got in touch with Mr. Kindig and he sent out Mr. Ewell. We spent nearly a week in inspecting the surrounding territory and located disease in only one yard three and one-half miles away. This yard consisted of eighty colonies, all of which were diseased and since we did not have the right to burn them at that time and the owner refused to allow us to treat them, I kept in touch with him. By the next spring, he did not have a live bee.

I stopped in two times during the winter and spring to make sure that he did not leave dead colonies with open entrances, but he was careful and always carried them to the basement and melted up the combs. This experience occurred at the north end of the territory where I operate.

Later I had similar experiences at the east and the south of what I term my territory. In these last two instances, the source of disease was from four farmer-owned swarms in one case and two in another less than half a mile distant. Six of my colonies in each instance were infected, all found during a month's time after the first one was detected and none found during the rest of the season or since. I moved the colonies right near my house, being careful to get every bee, and treated them just after the other bees quit flying for the day, taking every precaution that I could think of and always burning the combs at once and burying the ashes. I always shook right on foundation until one swarm showed a return of disease and since then we practice double shaking.

That was the extent of my trouble until 1913 and until that time I could claim that loss from disease in my case was negligible. During 1929 we did not find one case of disease in our outfit. Imagine our surprise, therefore, the following spring when we found a yard of 55 colonies diseased out of 65 in a territory where we had never had disease around us to our knowledge. We moved out the ten healthy colonies and treated the rest of the yard, after the clover flow was on for about three days, so there would be no strange bees to rob that might cause trouble.

That was too big a job to do before sun down so we spent the day at it. We took along ten extra empty hives with covers and bottoms and shook the first ten, and started a fire before we began to shake so combs could be thrown on and burned at once. Then the ten hives with covers and bottoms were thoroughly scraped and scorched and the process repeated.

In the morning of the third day, we removed the comb that was built in the interval, scorched the place where it had been and gave full sheets of foundation. No disease showed up during the rest of the season nor has it shown up since. In other words, we had 100 per cent success. That year the disease also was confined entirely to that yard.

Now we come to a new chapter in this experience. In one location where drought had shut off all possibilities of a flow for the next season, according to our opinion, we moved the bees out; but two years later, moved them back. This territory had always been found clean when inspected according to our report.

One day in early spring a few days after we had given some of the colonies a pail of syrup, we found the bees in this yard flying as though there were a honeyflow. Since it was our best wind protected location, I thought this protection was the reason why the bees were flying so

much when other yards visited the same day showed practically no flight.

I gave the matter no further thought until after unpacking when we found this yard heavily diseased. I see I made a mistake when I look back at it but I learned more about disease than I would otherwise know and I do not regret having gone through the experience.

The infection we found later to have come from a group of twelve colonies, one and a half miles away where bees had been moved in. These colonies had been allowed to run down with disease and the hives remained out in the open inviting free robbing after the colonies were dead.

The diseased colonies from my own yard were moved to a place where as far as I knew there were no other bees within robbing distance. I yielded to the request of a friend who thought it might be European Foulbrood and who suggested requeening and destroying the cells in ten days and giving a ripe cell from good stock. I also selected three cells and marked them A., B. and C. respectively and found and marked three similar cells calling then A1, B1 and C1. From the material in cells A., B. and C., I made a smear on paper and mailed one to Kelty, the other to Mr. Hambleton and it was both reported American Foulbrood in all three and Mr. Kelty reported European also in cell C. Cells A and A1 were typically American in the larval stage. Cells B and B1 were typically American in the pupae stage with tongue attachment and the cell C and C1 looked like European.

Cells A1, B1 and C1 were not disturbed and were definitely located so that developments could be watched. It would take too long to give all the notes I took on this experiment and I will report it briefly.

Although I have always had the impression that it is generally accepted as a fact that bees seldom clean out American Foulbrood, I found that all six cells which I watched were cleaned out and the cells polished but not until the remains had thoroughly dried down. There was no mistake about the location of the cells as I had a very definite way of locating them.

The outer end where the air can circulate freely, dries down first and is first removed and then gradually, as the material continues to dry down, that at the back of the cell is also removed. This process took about three weeks for those cells that were at or near scale stage and it took six weeks until all scales had been removed. For a time the brood from the young queens seemed to be healthy and then the disease again appeared.

Now here comes a surprise; at least it was for me. As the brood from the young queens was developing, I watched a healthy bee emerge from cells A and B. This was on August 12th. During the second week in September I found a bee emerging from cell B. Bees in other marked cells looked healthy but when examined were not sufficiently developed so I could know definitely what would emerge.

I also picked and marked the worst infected combs and watched them two months and found all scales to have been removed. Later when several colonies were shaken and piled on top of one, I found that after the brood emerged, the bees would clean out the cells before filling them with honey.

In all these tests, enough comb was present for the storage of incoming nectar so bees were not forced to cover scales with honey and I noticed that when this is the case, they will not store honey on top of a scale.

This experience indicates that if there is enough comb space, bees are master of the situation as far as cleaning the material out of the cells is concerned but **here comes the stumbling block. The honey is also infected.** No matter how often the bees cure themselves as far as ridding the combs of diseased material is concerned, reinfection from the honey in the hives spells the doom of the colony.

Just about this time I read about the Tanquary chlorine treatment and decided to try it, so later when brood rearing had ceased, we shook the bees off the combs and later put them through the treatment and also treated some supers which in all probability were clean, but there was a possibility of danger.

As this treatment was something new, I was afraid to use those combs that I knew had been diseased but I used the others that I had reason to believe were clean in the fist place.

Duing last summer, one Bay County beekeeper reported a return of the disease in treated combs and I found that the first crop of honey produced in these combs tasted like chlorine. Then too when treating combs, no matter how careful one may be, a sealed or blind cell may be missed so it would mean years of careful watching to know if the work has been done right.

Last summer we had some splendid inspection work so it gives me a chance and I have come to the following definite conclusions and resolutions.

1. If only a few colonies are diseased, burning is the safest and cheapest way to get rid of the trouble.

2. If a considerable number are involved, move them to a hospital yard, shake them carefully and burn the combs.

3. Treating of combs with chemicals will receive no further consideration from me because of the human element of imperfection and care and time necessary to know that the work is done thoroughly.

I might say too that I consider the Demaree method of swarm control detrimental to the complete eradication of disease in a slightly infected yard as it easily brings about a condition where a swarm harbors the disease but even the most careful examination will not show it.

It is also advisable to leave stores enough with the bees in the fall so no feeding is needed before fruit and dandelion bloom. Feeding arouses the bees and they will scour the country to find diseased material if there is any, but we don't feed them and are watchful, we may be able to locate all this material by inspection before the bees do.

It has been said truthfully that the smaller the form of life, the more difficult it is to control. It would not be difficult to make certain that a given area is free from elephants but that's not the case with the organism causing American Foulbrood.

The greatest care, drastic measures to fight it and eternal vigilance are absolute requirements with this disease.

Honey at Grain Exhibition

One of our readers in Saskatchewan has sent us clippings of advertising of the World's Grain Exhibition and conference which is to be held at Regina, Saskatchewan on July 24 to August 5, 1933.

There will be over forty nations, states and provinces represented in this exhibit which is to be something outstanding.

The significant factor is that the Saskatchewan Beekeepers' Association has made arrangements with the Regina Red Cross Society to donate honey for Red Cross tea room which is to be located in the World's Grain Show Building during the fair. A mighty good piece of advertising and publicity. The American Bee Journal also acknowledges receipt in the same mail of an invitation to the World's Grain Exhibition.

Heard in Iowa

Newman I. Lyle, President, Iowa Beekeepers' Association . . "I never made any money from my bees until I got foulbrood."

The idea that foulbrood makes a better beekeeper is not a new one. It eliminates carelessness, increases observations and demands attention which beekeeping, without foulbrood seldom receives. We can vouch for the fact that there is practically no disease in Lyle's apiaries and the price of it is eternal vigilance.

Just by the way of a pat on the back, we would like to add to that, President Lyle's yards are neat, clean, well painted, well arranged and as highly efficient an outfit for honey production as we have had the pleasure to see anywhere.

Additions to Honor Roll of American Honey Institute

The following additions to the Honor Roll of American Honey Institute have been sent in by Mrs. Jensen. The Owens-Illinois Glass Company, Toledo, Ohio is added to the list of Supporting Members with a contribution of $15.00. Contributing Members — California— A. W. Thompson, San Jacinto, $1.00; Iowa —Fayette County Beekeepers' Association, Sidney Bass, Secretary-Treasurer, Fayette, $4.00; Maryland— Maryland State Beekeepers' Association, E. N. Cory, Secretary-Treasurer, College Park, $5.00; Michigan— Gerald K. Hutton, Chesaning, $5.00; Ernest Pettifor, Alba, $1.00; Wisconsin—Washington County Beekeepers' Association, A. H. Seefeldt, Secretary-Treasurer, Kewaskum, $6.30; Geo. Jenewein, Merrimack, $2.00.

Geo. Jacobson, Kaukauna, Wisconsin, 120 lbs. honey; G. J. Lengst, Prairie du Chien, Wisconsin, 240 lbs. honey; M. C. Berry, Menomonie, Wisconsin, 600 lbs. honey; Wm. Wolkow, Hartford, Wisconsin, 10 lbs. honey; Chas. Giaque, Stanley, Wisconsin, 10 lbs. honey; Fred Sievert, Box 101, Porter, Wisconsin, 60 lbs. honey.

Mildness in Honey Preferred

The article entitled "Hurrah, Sic 'Em Tigue!" in the June issue of the American Bee Journal warrants, we believe, further comment.

We wonder if white honey is in greater demand than dark honey simply because of its color? It has been our observation that people who have had the opportunity to taste the mildest of all honey flavors, water-white sage honey, enjoy it as a steady diet, whereas stronger honey does not have a lasting appeal.

When a strong honey is used on breakfast cereals the customary flavor of the cereal is so entirely altered that the usual tendency is to return to sugar as a sweetening agent.

Probably the greatest energy producing food in existence is a mixture of finely ground cooked nuts and honey. It is said that this food has been consumed for centuries by some of the families of India, who have discovered in its consumption the secret of long life and the "fountain of youth." This mixture as a spread for bread has the flavor of ambrosia when mild sage honey is used. On the other hand, a strong honey entirely destroys the mild flavor of the nuts.

It would almost seem that if some means of treatment could be devised to relieve strong honey of its tang and give it a more delicate flavor, honey would immediately achieve unprecedented popularity.

T. M. N. Lewis,
Wisconsin.

THE HUMAN PUZZLE

Who Is He?

Hurray! The number of guesses this time increased by three, so that the inevitable thirteen was avoided. As long as there is an increase in the number of votes and so in the amount of interest, let's try it again and it is our guess that this time you will be stumped.

Which of the two in the Barnum and Bailey picture is a well known beekeeper and who is he?

If you guess wrong, it doesn't count and if you reply at once, you may be among the first three correct and we will send you a book on bees.

The June "Who Is He?"

L. T. Floyd, Provincial Apiarist, Winnepeg, Manitoba. He is well known among Canadian beekeepers and also among the beekeepers of the States. Of the sixteen guesses received, twelve were correct. He was mistaken by the other four as E. L. Sechrist, Geo. H. Rea, J. C. Henager, Salt Lake City, and A. P. Rish of Manitoba.

Of the sixteen letters, nine were from Manitoba. Other guesses came from Illinois, Indiana, Georgia, Nova Scotia, Iowa, Alabama and Ohio, so the interest in the guessing contest is still pretty widely distributed.

L. T. Floyd is also a beekeeper and has done much to elevate beekeeping in Canada, particularly in the province of Manitoba where he holds his official position. He is the director and instigator of many things worth while in beekeeping in the Province. With L. T. Floyd and Prof. A. V. Mitchener, of the Manitoba Agricultural College, the beekeepers of the Province of Manitoba have an official force which is not excelled anywhere.

Chairman of A.H.I. Finance Committee Breaks Into Print

The Institute office sends us a clipping from the Milwaukee Sentinel of June 3rd about the theft of bees from Lewis Park, Watertown, Wisconsin, Chairman of the American Honey Institute Finance Committee.

Mr. Park was on his way to the Fair at Chicago when thieves stripped his automobile of two century-old beehives, bees included, which Park was taking to the World's Fair. They were to have been exhibited as a sample of what has been done in the line of progress the past 100 years.

Clipping Queen's Wings

A practical and quick way to clip the wings of a queen without handling the queen is to set the comb on which the queen is found in a rack prepared for that purpose which will hold the frame at an angle of about 50 degrees.

Prepare a holder with a thin rubber band the shape of a Y stretched across the top of the frame. Press with the rubber band on the body of the queen behind her head, holding her tight to the comb so she cannot move and then clip the wings with a pair of sharp little scissors.

A. H. Kouba,
California.

Shallow Grate Fire for Burning Disease

T. C. Johnson, Deputy Inspector in Indiana uses a shallow grate with success in burning diseased material in his work in the Indiana inspection service. A shallow pit is dug. This is not over a foot or a foot and a half deep and of sufficient area for the job at hand, then some kind of a fire grate is built in the pit using material of any sort, iron pieces or whatever comes handy to use to make a construction similar to a grate in a stove through which ashes may fall to the bottom. A good lusty fire is built on top of this grate and the diseased material placed on the fire. As it burns, it falls below as ashes and with a good strong fire, nothing remains afterward. Any possibility of bees obtaining honey or other material from the pit may be removed by covering up the remains when through with the dirt which has been dug out to make the hole in the first place.

Requeening Mean Bees

In the June Gleanings, Allen Latham states that there are some bees so mean that there seems to be no method of requeening them. The writer can agree with that statement after trying to requeen some colonies bought at a farm sale. They were the most vicious bees ever met in a lifetime of beekeeping. All attempts to requeen them failed and always they would rear their own queens from their own brood. No amount of protection would prevent them from reaching the person of the beekeeper and stings were numerous in spite of the best veil and gloves. Finally they were killed and the combs used to hive package bees from the south.

Fortunately such vicious bees are no longer common and when one comes into possession of them the most satisfactory disposition is to kill them and be done with it. Live bees with good queens are too cheap to make it worth while for one to take such unnecessary punishment as we did with that outfit.

Public Knows Little of Bees

When we are surprised at some of the absurd notions one hears about bees, one has only to remember how little he himself knows about things outside his own particular field. Life is too complex in this day and there are so many things with which to get acquainted that there is no time to become familiar with them all. Beekeepers will do well to encourage teachers who wish to tell their pupils about bees and honey. The best market for our product is among those who are most familiar with it. Popular books about bees in public libraries are more often consulted by persons wishing information than by those who want to keep bees.

Bottling Problems

The greatest need of the beekeeping industry is a more efficient marketing system. In the old days when every farmer churned the butter at home, there was great difficulty in securing a supply of uniform quality. Until the honey is bottled in well equipped plants by trained hands the honey market will suffer in similar manner.

One has but to visit the stores and note the appearance of much of the honey on sale to wonder that it sells as well as it does. Some extracted honey is cloudy, some is partly granulated and much of it is covered with a thick scum. Only a small part of the honey put up by the average beekeeper is well strained and bits of wax and other particles can plainly be seen. Fortunately honey does not absorb odors from its surroundings as does butter and the quality averages far better than the old time butter did.

The beekeeper who packs his own honey will do well to study his product and the methods of handling. Present day markets are much more discriminating than of old and an unattractive package is likely to remain unsold.

To remove all foreign matter from honey, to prevent it from granulating on the grocer's shelf and still retain its full quality is not an easy job. In heating the honey to prevent granulation it is very easy to damage the quality and without heat it is likely to granulate. Conveniently located packing plants in the hands of experts is a much to be desired service. When our honey is handled as our cream is now our customers will be better served.

Clarification of Honey

Since the publication of the articles by Lothrop and Paine on the Colloidal Constituents of Honey, there has been much interest manifested in the practical application of the information at hand. It is generally recognized as desirable to remove the cloudy appearance of the product in the market. At the same time fear is expressed that we may remove the peculiar qualities from our product which make it unique as a natural food. If those essential qualities which distinguish honey from sugar syrup are removed we have paid too high a price for fine appearance.

It is to be hoped that the work so well started by Lothrop and Paine will be continued and a study made of the effect of removal of the colloids. It is important to the beekeeper to know how far he can go in improving the appearance of his product without reducing its value to the consumer. It is assumed that honey has special food value as a result of the minerals or other elements which it contains. Any method of clarification must retain these special qualities. It is quite possible that further study will show that the appearance can be improved without sacrifice of any valuable element.

Sugar Consumption

When we read that the average consumption of sugar in the United States is more than one hundred pounds per person it is hard to understand where it all goes. In view of the known fact that so much sugar is used, it is harder to understand why it should be so difficult to sell the small amount of honey which is produced. During recent months there have been numerous sales of honey at prices as low or lower than sugar.

Another License Proposed

A bill has been introduced in the Illinois legislature which would require a fee of $100 for a license to engage in the business of florist, nurseryman or landscape gardener. It is simply an attempt on the part of commercial growers to prevent small gardeners from selling their stock. A man with a small garden of course cannot afford to pay $100 for the privilege of selling a few plants. Thus is individual freedom gradually curtailed. Every group is jealous of its own field and endeavors to erect barriers to keep others out.

This bill should not be permitted to become a law. It is unfair to the small home owner who wishes to secure some income from the sale of flowers or plants. It is similar in intent with the attempts in several states to make it impossible for the novice to keep bees by requiring a license. America has become the greatest nation on earth because of the fact that it offered the greatest freedom to the individual. The present tendency to curtail every possible avenue of activity and restrict opportunity to the favored individuals who are already established and can afford to pay a high fee to maintain the barriers is vicious. Those with small capital can only start in any business on a modest scale and build up slowly. If we make such starting impossible we must increase the number of persons dependent upon public support and reduce the opportunity to secure personal independence.

If this tendency is permitted to continue the whole field of productive activity will shortly be closed to all but those who are so fortunate as to be provided with abundant funds.

The Ripening of Honey

In the report of the Iowa State Apiarist recently published is an interesting paper by Dr. O. W. Park entitled "Ripening of honey by excretion a myth." Dr. Park has previously published several papers on the behavior of bees in the ripening of honey which have been reviewed in these columns. It has long been assumed by superficial observers that the bees are able to eliminate a portion of the surplus moisture from the nectar while on the way to the hive.

By means of bees which were fed at a distance of a half mile from the hive it was possible to secure rather definite information on this point. A comparison of the syrup on which they were feeding with that taken from the honeysacs of bees as they entered the hive left little doubt.

The idea that the bees ripen the honey on the way to the hive arose from observation that bees often expel thin liquid while in flight and the fact that new honey when deposited in the cells appears to be more concentrated than the nectar when gathered in the field. Park's observations seem to definitely prove that the bees change the concentration of the nectar but very little while gathering and returning from the field. He finds that the evaporation takes place in the hive and is accompanied with special manipulation to accomplish that result.

As to the moisture thrown off by bees in flight he accepts the conclusion of Charles Dadant published in 1880 that it is merely the waste matter discarded as a result of natural digestive process.

Vitality in Bees

S. M. Pattee of Cedar Rapids, Iowa in a paper which appears in the new Iowa Apiarists report stresses an important factor in the life of the honeybee which is too often overlooked. He calls attention to the fact that vitality is the most important character and yet the one most difficult to measure. The ability to sustain life, to resist disease, defer old age and sustain the vigor necessary to long service in the field determines the value to the beekeeper. Mention is made of a colony which Doolittle had intended to requeen because of the fact that the brood production was much below his standard. To his surprise the colony with the small brood production maintained a lead in number of finished sections for several years. The explanation was that the bees were more vigorous and had a longer average span of life.

Because there is no external marking which indicates vitality this character is not stressed as it should be. We can tell at a glance whether the color and markings of the bees come up to our ideal and we can measure the tongue to see whether it exceeds the usual length, but there is nothing in the appearance of the insects to guide us as to length of life, vigor of action nor industry in the field.

The extremely low price at which queens are now selling leaves little incentive to the breeder to do careful work in selection of his stock. His one opportunity for profit is to get out the greatest possible number of queens in the shortest time. It would be extremely fortunate for the industry if some means could be found to secure some careful breeding with the various important factors in mind. To do this involves an expenditure of time and money that present prices for queens do not justify.

Roadside Improvement

A recent law passed by the legislature of the Province of Quebec prohibits the erection of bill boards along the main highways. This is in line with the public sentiment which demands that public roads shall be made attractive. Blazing sign boards along American highways have spoiled the beauty of many scenic spots and been an offence to every eye. There is every reason to expect that within a few years all important highways will be beautified and will take on much of the appearance of public parks.

While this development is going on is the time for beemen to take notice of the kinds of trees which are planted. A word at the right time will insure that such trees as basswood, hard maple, tulip-tree, locust and others which yield nectar freely will be included. Thus it may well be that public highways will furnish abundant bee pasture.

In many middle western localities the roadsides are planted with alsike clover and miles of the finest bee pasture thus become available. Probably no beeman made any such suggestion but the clover was planted because it is a good soil builder and holds its place well once it is established. Where sweet clover is used it is too often cut before coming into bloom and thus fails to serve the honey producer.

Since the beekeeper is dependent for his pasture on plants that grow on lands beyond his own bounds it is important that he keep an eye on the actions of his neighbors. The time to get roadside bee pasture is when the highway commission is making the improvement.

Clear Thinking Needed

Never has there been greater need of clear thinking than now. In times of stress when values depreciate, markets are erratic and economic pressure is unusual, men are likely to lose their bearing. Men in public office are subjected to great strain. The demands for reduced expenses on the one hand and unusual service on the other are impossible to reconcile. Every public officer is a target for criticism and complaint. Under such circumstances it is not surprising if unsound policies are put into effect.

In private business men become either unusually conservative or they take reckless chances in an effort to recover their losses. It requires a level head to avoid the pitfalls of the time.

Beekeepers as a class seem able to meet the situation as well as any. While they are practicing new economies and struggling to make ends meet, most of those with whom we come in contact are optimistic and sane in their viewpoint.

No Best Race

It is interesting to note that with three years of comparison under identical conditions Doctor Park has found no outstanding difference in the behavior of the three races of bees used in his experiment at Iowa State College. Everybody knows that there is a great variation in the qualities of the bees of any race as there is of the cows in any herd. Some will produce far more efficiently and profitably than others. While Park is not yet ready to announce his results, one gets the impression when visiting with him that the differences are largely the result of selection of queens of whatever race, rather than of any special superiority of one race above another.

Cross Bees

There is a great difference in the temper of bees at the hands of careless or careful beemen. Much depends upon the way in which they are handled. It is true that bees sometimes become extremely cross in the most carefully conducted apiaries. This may be due to shortage of pasture. Bees are inclined to be cross when there is no honey to be gathered. It may also be due to supersedure of the queen. Colonies which are extremely ill tempered when the old queen is failing and a new one is being reared may be gentle enough when the young queen begins to lay.

Rough handling by the beekeeper is very often responsible for the ill temper of the bees and this fault can be cured by careful attention. Jarring of the hives, pulling off the covers and lifting the supers without smoking the bees very easily starts them to stinging.

One who moves carefully, uses smoke judiciously and avoids unnecessary jars will have to contend with far less stings than his nervous neighbor. No one likes to be stung and the care needed to reduce this discomfort to the minimum is well worth cultivating.

Bee Yard, with Abbey in the background.

Buckfast in Devon

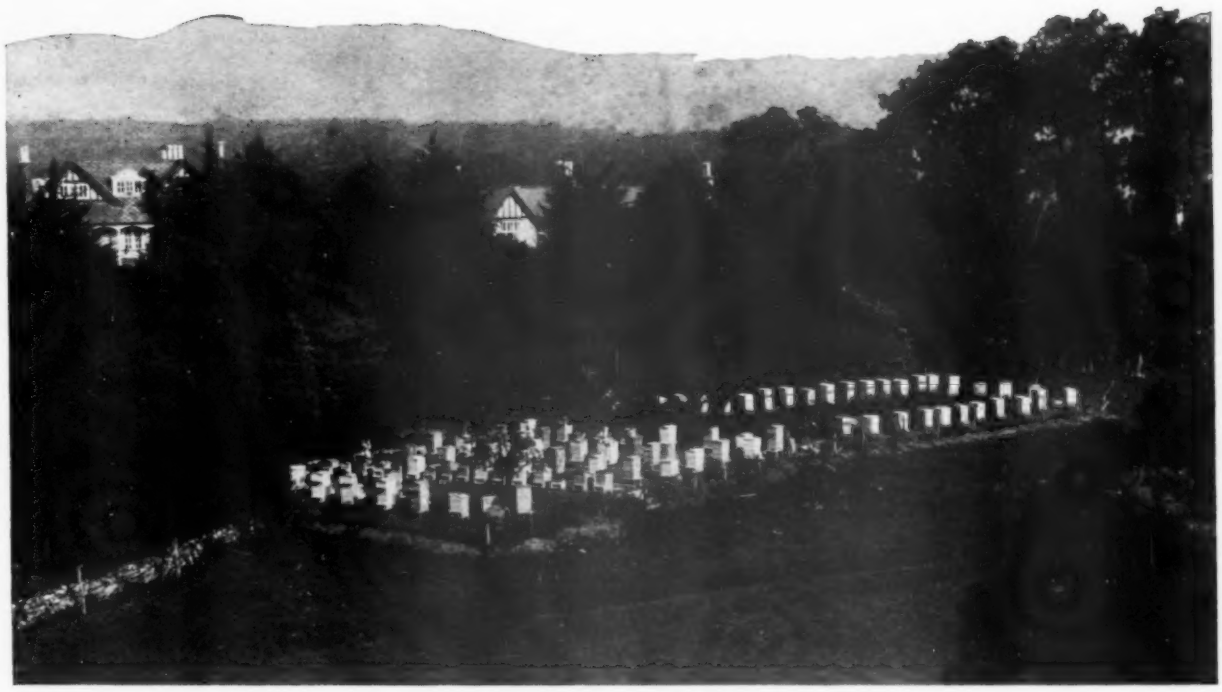
By John Mavie
England

THE ability of an American citizen to discover and visit the various places of interest on this side of the water is a constant source of wonder to Europeans. We are not given to hustling, when on holiday, and we do not take the pains to find out as much as we might about the historical and natural interests of our chosen resort in the summer time. There are heaps of Americans who know more of England than most of the English people. For that reason I do not think it necessary to spend much time in describing Buckfast Abbey.

As an Abbey it is known to thousands of Americans. As an amazing instance of devotion and zeal, coupled to imagination, it is unique. Thirty-five years ago all that remained of the pre-reformation monastic buildings was a buried foundation wall; today it stands complete and rebuilt as it was in the days of its early glory. The actual building has been accomplished by the devoted labor of

Brother Adam in the new bee yard.

Grafting house.



A perfectly placed apiary at Buckfast.

a mere five men. Clad in the garb of their order, they have laid stone on stone, with devout pertinacity, until, this year, they were able to admit the Papal Legate to a finished shrine. Behind those five men have stood the rest—the Lord Abbot and their brethren. Loyally they have

Close view of grafting house.

supported them, and by prayer and faith they have enabled this thing to come to pass. But every American has heard of this or seen for himself. Thousands of Americans have watched these patient laborers as they turned a vision into a fact, and they have told the story to their fellows when they have returned.

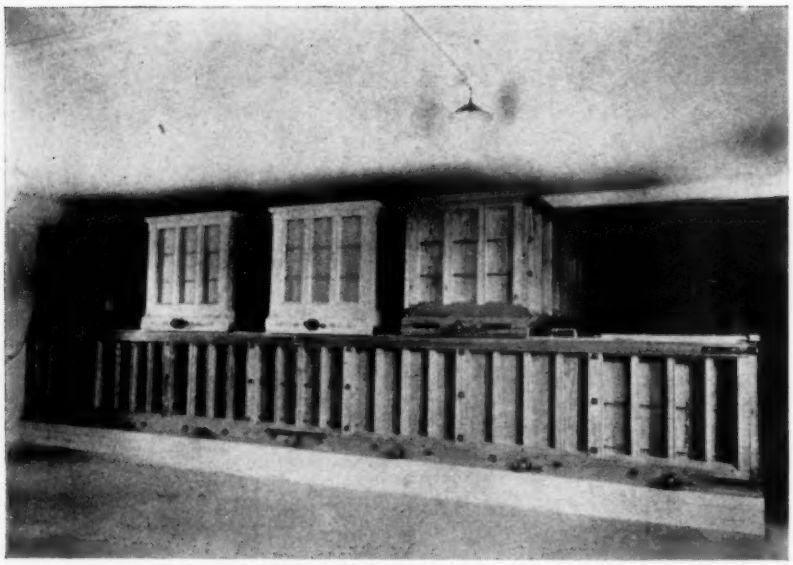
What is not so generally known, however, is that, by these monks, beekeeping is practised in the most modern and efficient way. It is questionable whether in any part of the world it is done so well. This may seem a startling exaggeration, especially to those American beekeepers who have visited England. You think of us as hobbyists, in your eyes we keep our bees as pets, we have no commercial beekeeping anywhere. This I should imagine to be the verdict of American beekeepers, and in the main, it is true. There is nothing in England like the commercial beekeeping of America. A man with 200 hives is rare in this country.

But at Buckfast you will find the exception. From start to finish efficiency and ordered method is the keynote. The monks think in tons, as you do in America, and they have storage room for 27 tons. They practice migratory beekeeping as your beekeepers do, way down on the Mississippi. They are queen breeders on a scale comparable to your queen breeders, and only lack your climate to produce queens with the same regularity and prolificacy. They are as patient and painstaking in improving their bees as they are in building their Abbey. They take infinite trouble to insure just the right mating for every queen. They also prepare their honey for market with the same zeal. It would not be an exaggeration to say that the way the monks pack their honey for the market is an object lesson in how to make selling easy.

But to enter into more detail:

The visitor who comes to Buckfast and who is interested in honey production, will not be shown the apiaries, storage tanks, packing room, etc., unless he makes special inquiry for Brother Adam. Had I the pen of

Queen mating yard.

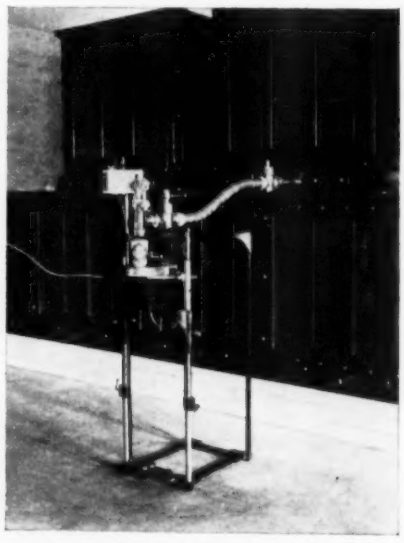


Honey tanks built by Brother Adam.

a ready writer I would attempt a pen picture. But Brother Adam would not enjoy it if I did. For he is the personification of the quiet spirit and hardly ever do you see him the alert, vivid energetic beekeeper that he is in reality. He wraps himself in quietness as the woods wrap themselves in gloom; and gentleness and an ordered spirit are the very essence of his being. A woman is not more tender with her child than Brother Adam is with his bees, and the drawing room of a palace not more immaculate than every part of his workshops and equipment. It is a joy to watch him kneel behind a hive, and take out combs, and find a queen. His fingers are strong and big, for he began as one of the builders of the Abbey itself, but it is strength so controlled that not a jar or roughness disturbs a single bee.

When you have found this Master of the Bees he will take you graciously around his yards. Most of the stocks are away in sheltered orchards in the quiet Devon countryside or late in the year they are far up among the moorland spaces of Dartmoor, but the Home Apiary he will show you. It is there he does the queen rearing. With its thatched houses for grafting in, its close-shaven lawns, its long beds of begonias and herbaceous flowers, all framed in a bank of forest trees, and the babbling Dart at its back, there is no more perfect picture of what a model bee yard ought to be. A photograph can only produce a poor impression, for there is no color there, and color is the soul of the place, next to order and neatness.

In the principal bee house, Brother Adam keeps the stocks for queen rearing. His breeder queen in one; his starting and finishing colonies in others; and his control hive on scales that tell him the daily nectar flow. In one corner he has an incubator, and in another his table and grafting tools and his cases of cups. In order that mating may be controlled he has established a yard out on the moors. To that yard he takes his drone queen and all his nuclei. Two hundred virgins are there all the season, and as fast as they mate they are taken away, and replaced with fresh ones from the home apiary. In a climate as variable as ours, mating is not as regular as it ought to be and



Bottling machine, with tanks behind.

the destruction of virgins is very great. Brother Adam believes that a queen not mated quickly is never as good as she should be and he ruthlessly destroys all that have passed the allotted time.

After you have seen all this Brother Adam will show you his extracting room and his storage tanks, and, if you wish, his large building for supers, and for his van. Concerning that van there is a sad story to tell. Last year he filled it with nuclei hives, all charged with bees and queens, and took it to the queen yard. The place is miles away from anywhere—the loneliest, most secluded spot in England, almost. He and another monk, Father Benedict, left the van standing on the road, and passed, themselves, across the bridge over the stream, to drink a cup of tea before unloading. As they sat in the bee house, they could see the van 200 yards away. Suddenly smoke began to rise, then flames, and as these monks, their faces alight with excitement and concern, their leathern-girt cassocks flying in the wind, raced to their van they saw the wax and wood and petrol grow into a funeral pyre for the 200 queens imprisoned therein. To approach, even, was hopeless; to stay the flames impossible. Within 10 minutes all was over and a thousand dollars' worth of equipment destroyed.

It was a staggering blow; for the building of the Abbey calls for every dollar they can find. And the worst of it was that the queen trade was rendered impossible and loss was added to loss. New virgins could be produced quickly enough, but not new hives and combs and mating nuclei.

But a new van is now in the large store; and thousands of polished wood supers also. Every super is polished and varnished, as every hive is painted and enamelled.

After this you will be shown the extracting room. This contains the usual centrifugal power extractor, with its pump to convey the honey to the floor above, but it contains also the heather press. The need for this is something unknown to American beekeepers. Heather honey cannot be extracted. It has to be pressed. Every comb has to be placed under heavy pressure, and crushed, and the honey squeezed out. The monks have made the same efficient press for this, as for the rest of their work. They have built an immense tank of reinforced concrete lined with white tiles, and suspended above it the press. This is operated by a dynamo, and the force exerted is 80 to 100 tons. When the combs come out from beneath it they are just a solid slab of wax, and not a particle of honey is to be found. No honey is so valuable, and no honey is more sought for, and the honey from this press is being sold even in New York.

Note again how spotless is this room—usually the one place in a commercial apiary that is sticky and a little disorderly.

Now come upstairs. Here you will find the culmination of Brother Adam's skill and enterprise. It is the storage and packing chamber. I enter it, always, as I do a shrine itself for, mark you, all this that you have seen is one man's devout soul expressing itself in worship. Here the worship has achieved its fullest expression.

Without previous training as a mechanic, or carpenter, or engineer, this solitary monk set himself the task of building tanks to contain 27 tons of honey; not rough things of galvanized iron; not a mere heavy container with a spigot, but fine panelled and varnished cabinet makers exterior wood work, fitted inwardly with heavy copper tinned tanks. Inside each tank a net work of bent tinned copper pipes to carry heat through the honey and liquefy it when required. Outside each tank gun metal and brass cocks and pipes to control the heat and convey it to just the tank required. Each tank—for there are a series and one set raised above the other—holds 2 tons of honey. Nor are they stationary—each tank is on ball bearings, and can be moved along rails by the strength of one man. And in each tank a flexible polished brass pipe leads to the automatic bottling machine. In an hour that machine can weigh and fill 2,000 containers, without making an error, or spilling a drop. A thermostatic boiler controls the heat, and in 36 hours a tank of 2 tons can be liquefied, scientifically and perfectly.

Those who have read Victor Hugo's "Toilers of the Sea" will understand me when I say that room makes me recall the lonely heroism of Gilliatt toiling to accomplish the herculean task of raising the Duranda.

As you turn away from that triumph of Brother Adam's, glance, before you go, at his cartons, the designing of Brother Gabriel, and note the cases in which they are packed for the trade. Was ever daintiness better exemplified? Think of honey packing, as you see it most whiles. Think of common pails, and glasses, and the way they are delivered to the stores! Here you have seven-color printing to commend a pound of honey. Amazing! But mighty good business, I assure you. For there is no question in Buckfast of disposing of queens or honey. Their market is never glutted. The honey is the dearest in the world, but it sells. They can't get enough. It is a question of quality and efficieney; and, of them, it can't be said, "The children of this world are wiser than the children of Light!"

I grow honey myself and I sell honey, and, every now and then, I go down to Brother Adam to bathe in his quiet spirit and efficient ways. I come back sick with my Store, and my honey, and my ways and I try to reform.

If you come to England, go yourselves, also. See if I have told the truth, or less. We have no other beekeepers over here that count. The rest of us are, mostly, pifflers, and often braggarts, but at Buckfast you will find things to speak louder than words. My own view is that Faith can remove mountains, and Devotion work miracles. Having neither, I can only humble myself and be still.

Honey Consumption on Illinois Farms

We often hear statements regarding the consumption of honey, but here are some figures from a definite survey on consumption of farm produce by farmers' families on 200 north central Illinois farms. The report is by M. L. Mosher, of the Department of Agriculture Economics, College of Agriculture, University of Illinois, and reported in The Extension Messenger of April 19, 1933.

The 50 families using the most farm produce are compared with the remaining 150 families of the group studied. The 50 families show an average consumption of 14 pounds of honey as compared to 5 pounds for the remainder. The average family in these studies ranged from 4 to 6 persons. One would expect greater consumption in an area where honey production ranks relatively high.

Comparative consumption of other products, between the two groups, is of interest. Here are the comparative figures on some of the other food products consumed, on which Mr. Mosher estimates a saving on cash cost of food of about $250 a family.

Gallons of milk	365 and 305
Pints of cream	268 and 67
Home-made butter	137 and 44
Dozens of eggs	259 and 151
Chickens	56 and 34
Pounds live weight of beef	135 and 30
Pounds of pork	1403 and 429
Pounds of mutton	23 and 0
Bushels of Potatoes	22 and 10
Bushels of fresh fruits	5 and 1.5
Quarts of home canned fruits and vegetables	148 and 86

Sources of Sainfoin Seed

Here are two added sources of sainfoin seed. One from Xavier Widmer, Salzers Seed Company, La Crosse, Wisconsin. Cultures to inoculate seed may be obtained by sending a dollar to the "Bundesanstalt fur Pflanzenschuts," Vienna, Austria.

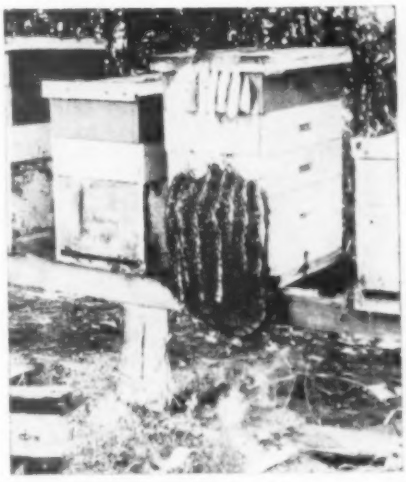
The other from H. P. Ogden of Knoxville, Tennessee from the Agricultural Experiment Station of the University; listed for sale by F. Lagomarsino & Sons, Sacramento, California.

Johnson County Girls' Club Homemade Cereal Recipe

The Johnson County Girls' Club of Iowa has devised a homemade cereal which has been given to the Bread Clubs of Iowa. The real test of its deliciousness and nutty flavor is in the eating, so try this inexpensive cereal with high food value.

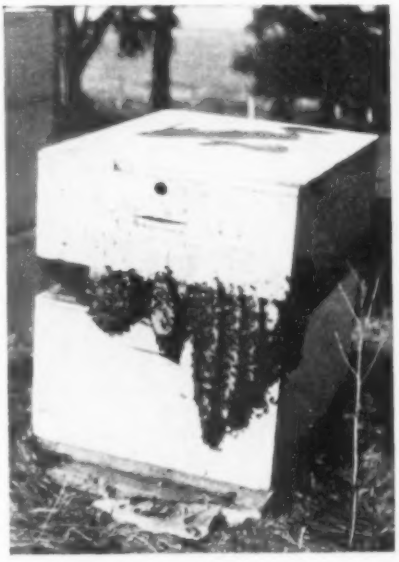
The girls have called it "Wheat Nuts." Wheat nuts are made by sifting together: 3½ cups of wholewheat flour, 1 teaspoon soda, 1 teaspoon salt; add 1 cup honey and enough buttermilk to moisten. Bake like a cake in a cake pan in a moderate oven. Break into small pieces and grind in the food grinder, then brown in oven. Store in a covered jar in a cool, dry place.

No Room Inside



In Illinois sand.

To prove that the occurrence shown in the pictures is not infrequent, the 10-frame hive photograph with combs at top and bottom was taken in Illinois, near San Jose, on a sandy land. The bees did not have room inside the hive so came right out the entrance and finished the job in the air. The other picture was taken in Atlantic, Iowa at the home of our Field Editor. We are not so sure whether this was a case of no room inside or whether the bees got started there in the first place.



In western Iowa.

A Simple Plan for Raising Queens

By H. R. Busch
New Zealand

HERE is a photo of our queen rearing apiary where we rear queens for use in our outapiaries. We have reared all our own queens since starting beekeeping and have found that it is best in the long run. The layout of the apiary is our first consideration so as to insure efficient and rapid working conditions.

We recommend the following method for cell building: select a strong colony, remove the queen and all unsealed brood from the bottom hive and place in the top hive. Then put a flat alighting board with entrance reversed between the top and bottom hive.

The hive is then left until the bees are aware that they are queenless when a bar of grafted cells is placed between the brood in the bottom hive and the hive is fed for four days. Then the alighting board is removed, and a queen excluder is put in its place allowing the bees of both top and bottom hives to unite again with the queen above the excluder.

By this method, the hive is not put back as by making the whole thing queenless. On the 10th to 11th day, cells are introduced to queenless 4-frame nuclei. Selected queens are used for rearing large numbers of drones to insure that the young queens are purely mated with the desired strain, ample time being allowed for results and all mismated queens get short shifts.

In regard to equipment, uniformity is the keynote throughout the whole apiary and to prevent drifting of bees and possible loss of young queens through entering wrong hives, a varied color scheme is used in painting the nuclei boxes. This has proved to be successful. For feeding the nuclei, a flat ¼ pound tin is used with a spout on one side. The spout fits snugly to a hole in the front of the hive and is robber proof. A small wooden float is placed in the tin to prevent the bees from drowning.

A Great Cooking School

By Mrs. Benj. Nielsen
Nebraska

Last September one of our leading newspapers brought a famous cooking expert to our town to conduct a cooking school. Beforehand all merchants or firms likely to be interested were solicited and paid for an advertisement in the paper. This entitled each advertiser to a display booth at the school. We put up our honey booth carrying out a color scheme of yellow, black and white. We sold honey and distributed recipes. The expert used good honey recipes before hundreds of women (and some men) eager for new recipes, at each session—afternoon and evening for three days. Lucky numbers drew prizes of extracted and comb honey at each session. The following week all recipes were published in the newspaper.

Through this medium we reached hundreds of people we might never have made contact with personally. If we beekeepers can succeed in reaching and interesting the women in cooking and baking with honey how tremendous will be the increase in the amount of honey sold!

Great interest was shown by these women and many came to our house to buy a little honey to try these recipes, only to return many times. To these new customers we gave more absolutely proven, good recipes which we had worked out. Just any recipe to use honey works much harm to our cause by tending to discourage women in the use of honey.

We have been repaid many times for this comparatively small investment. Now is a golden opportunity to interest women in cooking and baking with honey for more women are doing their own baking now than for many years past.

Let's do our part in making honey a habit with these women!

Error in Date of Dr. Miller's Death

Your attention is called to a slight error in the account on page 169 regarding Mrs. C. C. Miller and Miss Wilson. In the article mentioned, you report the death of Dr. Miller on June 10, 1920 at the age of 89 years. Dr. Miller died on September 4, 1920 so says your October, 1920, issue. There must have been some slight confusion with the date of his birth which was July 10, 1831.

V. G. Milum,
Illinois.

How Valuable Is an Old Comb?

In talking with one of the largest beekeepers in the Middle West recently, we were introduced to a new idea concerning old combs. In the practice of this beekeeper, old combs over four or five years of age are discarded rapidly and new combs built on fresh wax. As many as 5 or 6 thousand combs have been discarded in a single year to be rebuilt with fresh, new, light colored combs. The chief reason in the opinion of this producer is that old combs cannot produce the high quality honey which new ones do.

This is contrary to the idea so often expressed that a fully drawn comb is a valuable possession and must be preserved as long as possible, either for honey production or for brood rearing. Of late years, however, there has been a tendency to get away from the use of old combs for the storing of honey because of the possible effect on the honey itself, due to any accumulations which may be taken from the combs when the honey is extracted. This idea of drastically sorting out brown or old combs and discarding them for honey production is relatively new and seems to be increasing in practice among many producers.

[We have taken the whitest honey from very dark combs.—Editor.]

Package Bees and American Foulbrood

By A. P. Sturtevant
Associate Apiculturist, Bureau of Entomology (1)
United States Department of Agriculture

Introduction

AMERICAN foulbrood has mysteriously appeared from time to time in some apiaries in localities previously considered free of this brood disease. The factors usually associated with the spread of this disease generally can be eliminated from consideration as causes of these apparently inexplainable outbreaks. In a few cases that have come to the attention of specialists in the Bee Culture Laboratory, more or less suspicion has been directed towards the importation of package bees into the locality. However, the suspicion, in most instances, is supported only by hearsay or circumstantial evidence.

A search of the literature on beekeeping for several years past has brought out few significant facts. M. A. Gill (2) in 1929 made the following statement concerning an occurrence of this disease in Utah:

"There has been quite a scare here among some beemen who claim that foulbrood has developed among package bees. One man claims he got fifty packages and every one developed the disease. I can not see how this could happen if they had absolutely pure sugar syrup in transit.

"I wish some one would send me one package taken from a foul colony and given pure sugar syrup where it would take three or four days in transit, if it does not conflict with the law. It seems to me that it would be about the same as the starvation plan of treatment as everything would be digested and passed on during transit. But I would want to be sure that the food in transit was pure sugar syrup.

"In the final analysis, the shipper of package bees should use nothing but pure sugar syrup for food in transit, and the man who receives such packages should know absolutely what he is feeding."

A somewhat similar instance was reported to the writer in 1931 by a beekeeper in Utah who ships many packages of bees from California, largely to one location where he claimed there had been a continual reinfection of American foulbrood from year to year, presumably from the packages, making eradication impossible.

The Beekeepers' Association of Quebec passed a resolution in 1931 asking the Canadian Government to prohibit the importation of bees in packages on the ground that such packages were causing the development of American foulbrood (3). A short article by C. B. Gooderham (4), Dominion Apiarist, giving the reasons for not complying with this request, was published in reply to this resolution. He said, in part:

"We have never yet, up to the present time, had any authentic case of the introduction of American foulbrood into Canada by the importation of bees in packages without combs.

"This danger was possible in some years when a sugar candy was used to feed the bees in the package in transit because this sugar candy was composed principally of honey and the honey could contain the germ of the disease which proceeded to infect the colony with spores of **Bacillus larvae**. Even in these cases, however, there never was any definite proof that the disease had been introduced. It is true that the strongest proofs have been obtained in British Columbia indicating that the bees of a certain shipper had carried the disease because this disease had been found later developing in the colonies by means of these packages but there is nothing to prove that the infection had not been introduced by robbing after the packages had been established. We have heard of no more cases spoken of, however, during the past two or three years. We have not received any particular complaints, even from the prairie provinces, where the largest importations have taken place and where they have brought in all these years thousands of packages.

"During these last few years, the sugar candy as food for package bees has been in a large part, if not entirely, replaced by sugar syrup and the danger that the disease may be carried in the food has been almost entirely eliminated.

* * *

"We know by experience that the packages of bees without combs are safe and that when American foulbrood makes its appearance we rarely find the true source of the infection. We generally blame readily those things except the most possible of all, that is to say generally, an exterior infection of the colony to which the package has been introduced and a negligence on the part of the beekeeper in the treatment of infected colonies, combs, etc., or to infection in a neighboring colony and to the introduction of the disease by robbing. As one has seen bees gather nectar up to four miles from their hives, there is always cause to believe that they will fly the same distance to rob.

"In view of the preceding, I do not believe that the government should go farther than the dispositions taken. The number of packages which enter the Province of Quebec is much less than that which enter the other provinces. There is no practical means of saying whether the packages carry disease until it is established on the combs and they have begun to raise brood."

One other closely related item was reported recently by the German investigator, A. Borchert (5). He made the statement, as a result of a series of investigations, that it is possible for a swarm coming from a hive infected with American foulbrood to carry spores of **Bacillus larvae** with them to their new home, thereby transmitting the disease. He feels that care should be exercised in acquiring swarms of unknown origin or from apiaries not certified to be free from the disease.

In an attempt to obtain more definite information on this subject, the writer has corresponded with several persons in localities, particularly in Canada, where many packages are used each year. Some interesting facts have come to light; still, no authentic evidence of such transmission has been received. In particular, from one Province in Canada where large numbers of packages of bees are used each year comes the statement that no known cases of American foulbrood have arisen from this source and, furthermore, that practically all the packages used in that Province come from a section of the United State so remote that at least four days are required for the shipments to reach their destination.

(1) The Intermountain States Bee-Culture Laboratory of the Bureau of Entomology is located at Laramie, Wyo., and is maintained cooperatively by the University of Wyoming and the United States Department of Agriculture.

(2) Gill, M. A. Package Bees Taken from a Colony Having American Foulbrood and Fed in Transit on Sugar Syrup Should Never Carry the Disease. Gleanings in Bee Culture, 57: 787-788, illus. 1929.

(3) Importation des paquets d'abeilles. L'Abeille et L'Erable. 1 (2d ser.): 8. 1932.

(4) Gooderham, C. B. Note au sujet de l'introduction de la logue Americaine pas les paquets d'abeilles.—Question soulevee par une resolution adoptee a une reunion des directeurs de l'Association des Apiculteurs de Quebec, Montreal, 31 Janvier 1931. L'Abeille Et l'Erable, 1 (2d ser.). 8-9. 1932.

(5) Borchert, A. Einige Untersuchungen uber die Verbreitung und Bekampfung von Bienenseuchen. Archiv fur Bienenkunde 13: 89-102. Also abstract in Bee World, 13: 130. 1932.

Another Province reports that there has been at least one partially authenticated case of American foulbrood, presumably transmitted by package bees. In this instance the packages were in transit only about two days.

Procedure in Making Experiments

Early in June, 1931, work was started at the Intermountain States Bee Culture Laboratory at Laramie, Wyo., in an effort to determine whether packages made from colonies of bees infected with American foulbrood are capable of transmitting the disease and, if so, to determine the conditions affecting this transmission of disease—as the length of the time intervening between the making up of the package and the placing of the bees on combs or foundation, and the extent of disease in the colony from which the package was made. With the assistance of Prof. R. G. Richmond, Deputy State Entomologist of Colorado, in charge of apiary investigations, several colonies of bees infected in various degrees with American foulbrood were located in the neighborhood of Fort Collins, Colo. Somewhat later, through the cooperation of Prof. C. L. Corkins, formerly Research Associate Apiculturist of the University of Wyoming Experiment Station, a few more colonies were obtained at Laramie, Wyo. Several healthy colonies belonging to the apiary of the Intermountain States Bee Culture Laboratory were moved to an isolated location, were inoculated with American foulbrood, and the disease was allowed to develop. From these diseased colonies packages of various weights were made up, each with a caged laying queen. Care was taken in making up the packages to conform as nearly as possible to commercial practice. The bees were shaken from the colony with as little disturbance as possible and each package was immediately given sugar syrup in a can having a tight-fitting lid with two or three small perforations therein, the can being inverted in the cage. When completed the packages were moved to the laboratory, where they were kept in a cool place (with plenty of sugar syrup available as food) for periods of time corresponding to the periods that commercial packages might be in transit from producer to beekeeper. These periods ranged from 18 hours, which probably is below the minimum for most periods in transit, to 78 hours. At the end of the periods of time the packages were held, the bees were fed abundantly by painting the wire-cloth sides of the cages with sugar syrup. Colonies were then started in a completely isolated apiary site, by placing the package bees in hives, in the customary manner, either on empty drawn comb or on foundation. The queens were placed in their respective hives in provisioned cages to be released by the bees and each colony was supplied with one or more 10-pound pails of sugar syrup to serve as food until the bees had become established with sufficient stores to carry on normally. Careful observations for the appearance of diseased brood were made at regular intervals until the end of the brood-rearing season. Any colonies showing definite disease were destroyed in order to prevent possible spread of disease to the other colonies. Care was also taken to prevent robbing or drifting.

These experiments have been carried on for two seasons—the summer of 1931 and the summer of 1932. The colonies of the 1931 series that remained healthy at the end of the season were held over the following winter and observations were made after the beginning of brood rearing in the spring of 1932, before the second series was started. The colonies made in the summer of 1932 have been held over winter for observations in the spring of 1933.

The 1931 series included 24 colonies, 17 on drawn comb and 7 on foundation. In the 1932 series there were 8 colonies, 2 on drawn comb and 6 on foundation. Two or more

Table 1.—Results of experiments in the transmission of American foulbrood by packages of bees held in the package for varying periods of time (1931-32)

Infection in colonies from which packages were made.	Length of time packages were held	Packages placed on	No. Packages forming colonies that developed disease
Heavy	22 Hours	Drawn Comb	2
"	48 Hours	"	
Moderate	18 Hours	"	2
"	30 Hours	"	
Light	24 Hours	"	1
Total			5 (a)
Heavy	24 Hours	Foundation	2
"	72 Hours	"	
Total			2 (b)

Infection in colonies from which packages were made.	Length of time packages were held	Packages placed on	No. Packages forming colonies that remained healthy
Heavy	24 Hours	Drawn Comb	3
"	30 Hours	"	
"	54 Hours	"	
Moderate	18 Hours	"	9
"	24 Hours	"	
"	30 Hours	"	
"	42 Hours	"	
"	42 Hours	"	
"	48 Hours	"	
"	54 Hours	"	
"	72 Hours	"	
"	72 Hours	"	
Light	72 Hours	"	2
"	78 Hours	"	
Total			14 (c)
Heavy	72 Hours	Foundation	1
Moderate	18 Hours	"	9
"	24 Hours	"	
"	24 Hours	"	
"	30 Hours	"	
"	42 Hours	"	
"	48 Hours	"	
"	48 Hours	"	
"	54 Hours	"	
"	72 Hours	"	
Light	48 Hours	"	1
Total			11 (d)

(a) One from inoculated colony; 4 from colonies infected naturally.
(b) One from inoculated colony; 1 from colony infected naturally.
(c) Seven from inoculated colony; 7 from colony infected naturally.
(d) All from inoculated colonies.

duplicate colonies were made for each period of time the package was held.

Results

Table 1 gives a summary of the results obtained in the two seasons' observations.

Even when the bees were fed on pure sugar syrup, 5 out of 19 packages taken from colonies infected with American foulbrood were found to transmit the disease when the bees were placed on drawn comb, and 2 out of 11 packages transmitted disease when the bees were placed on foundation. In the colonies made up on drawn comb, the packages that transmitted American foulbrood were held for periods ranging from 18 to 48 hours, and no packages held for longer periods produced disease. In the colonies made up on foundation, the packages were held for periods ranging from 18 to 72 hours. One package placed on foundation and held only 24 hours developed disease, whereas another package placed on foundation and held for 72 hours before the colony was started developed disease. None of the other colonies of this series showed any evidence of disease by the end of brood rearing.

It is hard to say, from the relatively few data thus far obtained, just how much the ability of the package to transmit disease depends on the amount of infection in the colony from which the package was made. In the colonies resulting from packages placed on drawn comb, one 22-hour package and one 48-hour package came from colonies having heavy infection; one 18-hour package and one 30-hour package came from colonies with moderate infection; and one 24-hour package came from a colony having light infection. Each of the packages that produced disease in colonies started on foundation were from colonies having heavy infection.

The size of the packages seemed to have little direct relation to the transmission of the disease.

In one colony in 1931 started from a package held in the laboratory 24 hours and then placed on drawn comb, disease did not become manifest until the spring of 1932. In a colony started from a package held 24 hours and then placed on foundation only one cell of disease was found during the summer of 1931, and this had disappeared by the end of the brood-rearing season. However, this colony became definitely diseased during the spring of 1932. One colony of the 1932 series started on foundation from a package held 72 hours showed one cell of disease early in September. This infected cell disappeared by the end of brood rearing, but another cell was found at that time. This colony is being wintered over, but has been considered as definitely infected.

Discussion

It is evident that packages of bees, if made from colonies infected with American foulbrood, may transmit the disease, even though the bees are supplied with sugar syrup while in transit. It is also evident that disease may be transmitted in such packages, even when the bees are placed on foundation, and even after the package has been in transit as long as 72 hours. Considering these results, the information received from certain Canadian Provinces, previously referred to, is significant. In localities where the packages that are received have been in transit for four days or more, no cases of American foulbrood from this source have been noted. On the other hand, in localities where packages are received after being in transit only about two days, disease from this source has been highly suspected, if not definitely proved.

Why this condition is true is more or less a matter of theory. It is known that nurse bees that have been working on infected combs containing diseased larvae and scales may carry numerous spores of **Bacillus larvae** on their feet and mouth parts. It probably takes a certain length of time for the bees to clean the foulbrood spores off the various body parts. At least, sufficient numbers are left to produce disease should they get into the food of healthy larvae. It is also known that the shaking treatment for American foulbrood is successful only when every precaution is taken against transmitting the disease. In fact, this treatment is more often successful if the bees are forced by starvation to consume any honey they may carry with them. As package bees are always fed abundantly, some of the infected honey that they may carry in their honey stomachs may not be consumed before the new colony is established, particularly if the packages are in transit only a short time. The results of the foregoing experiments tend to throw further light on the many failures that have resulted from the shaking treatment.

Conclusions

From the results thus far obtained it appears that when there is a period of 72 hours or less between the time of making up packages and the time of using them for making new colonies the packages should be held in a cool, dark place for at least 96 hours, particularly if there is any suspicion of American foulbrood infection at the source from which the packages have come.

Possible Reason for Failure of Chlorine

Frank Rojina at the Mid-West conference (Iowa) suggested that the general failure of chlorine to successfully sterilize bee combs may be explained by the retention of air in the cells of the combs after they are immersed in the chlorine solution. Jarring the tank even after considerable time of treatment, results in the rise of air bubbles at the top, no doubt coming from the cells where it has been imprisoned. The chlorine evidently does not penetrate beyond these air cushions or else does not easily find its way into the glue-like masses of the disease scales in the cells.

Another disagreeable effect of the chlorine is the destruction of wires and the retention of repellent odors in the combs even after washing; an odor which sometimes exists for six months or more and is very disagreeable to the bees. Combs which have not been sufficiently washed to remove all traces of the solution and its deposits, if used for honey, will impart a bitter tinge to even the whitest honey.

Debts and Interest

By Jas. H. Birchard
Wisconsin

The article by Herald Albaugh in April, "The Way It Looks to Me," is quite interesting but he does not get down to the real trouble of the depression. I think it can be simmered down to one word—interest.

There is is not enough money in the country, taking every dollar to pay the interest on our various debts. Is it any wonder we are bankrupt? There are only three ways for getting money into circulation without paying interest on it every day it is out of the bank. Gold may be dug from the place where nature put it. It may be obtained from the point of a gun or it may be obtained in wages. Every other dollar outside of a bank some one pays interest on every day it is out.

I would like to know why the debts should be made capital for bankers. When a city or a state wants money, a bond is issued. Why not have the nation take it and issue the paper to pay them without interest the same as is done to the banks? What we need is a set of lawmakers who are not millionaires. We want statesmen. We want laws that are not special privilege laws.

However, we have been getting what we vote for. When we become a little better educated, we of course can change the situation but not until then.

My Experience With Scout Bees

By Austin Fields
Kentucky

DO bees have their permanent home selected and prepared for occupancy before they swarm, is a question that I have heard discussed pro and con ever since I have been interested in bees. A recent experience of mine may throw some light on the subject, or at least furnish food for thought.

In the early spring of 1932, I sent all my bees away a distance of five miles, except one very weak colony, which I kept at home for the purpose of experimenting on building it up with a special kind of a queen. Back of my honey house, on a hillside, I had three tiers of supers, tiered up out in the open, containing the frames from which chunk honey had been cut last fall, and each tier covered with a regular hive cover. One day in early June I was pleasantly surprised to see hundreds of bees working in and out of one of these tiers of supers, seemingly cleaning it out. I was wishing for a new swarm with which to replenish my weak colony, so here it was, I thought. I went out that night to carry this tier of supers up and set it down by my weak colony so the bees contained therein would have that as their permanent location when I made the transfer which I contemplated making two or three days later. But again I was surprised when I discovered that there was only one bee in that entire tier of supers.

But on the following day and for several days thereafter there were hundreds of bees again busily at work in and around that particular tier of supers, and the thought then occurred to me that they were only gathering the surplus wax and carrying it to their own hive, although I noticed that they were not concerned in the least with the other two tiers of supers, which had equally as much wax. I also noticed that much of the old comb was being carried out and thrown down in front of the supers in which they were working. Upon comparison I discovered that they were not from my colony, as the visiting bees were almost black, while mine were pure Italian. This activity on their part continued for a week or ten days, when, in the early afternoon one day, my wife heard a considerable roaring in the air and, looking up, she discovered bees — bees and bees by the millions — coming across the lawn. It was a swarm headed straight towards this tier of supers. She phoned me at my office as soon as she saw them settling on the supers and I reached home about thirty minutes later. They were practically all inside the supers and had gone to work when I arrived. I opened up the tier of supers and carried the one in which they had lodged up to my weak colony, and after giving the weak colony several whiffs of smoke I placed a queen excluder on top and set the super of visiting bees on top of the excluder and placed another excluder over the top of same and began to blow smoke. With a roar of protest the bees began to move downward through the lower excluder into my colony; and after all the worker bees were down I took the super out some distance and removed the top excluder and found therein a number of drones and a very fine looking, large, black queen, which I then and there decapitated to make sure that she did not fly to my colony and contest the right of possession with my yellow queen. On the following day my weak colony took on the appearance of a very strong, working colony, but its color had been transformed from yellow to black sprinkled with yellow, and they have already produced for me a fine box of surplus honey.

Never again were there any bees working around the remaining supers that were left at the location where they had been working and cleaning out so industriously for the preceding week or ten days. So I pass on to the reader the question asked in the beginning sentence of this article, "Do bees have their permanent home selected and prepared for occupancy before they swarm?"; and in the light of my experience in this particular case as above detailed, I most assuredly believe they do.

Seeking Happiness

If the bee lights upon a flower where there is no honey she quickly gets off and flies away to another. Why then should I seek happiness in wealth, in pleasures, in honors, which cannot enhappy me? Why should I not off them, as the bee gets off the plants that yield her no honey, and seek my happiness where happiness lies, in God's ways. (From an early writer.) W. H. Hull,
Virginia.

The Beekeepers' Special

Everywhere we go, we find beekeepers have either the Model A Ford or a Chevrolet truck like the one shown in the picture. Sometimes the rather small body in the rear is increased in capacity by the lowered tailboard and also by slatted sides which often extend above the top of the cab. These sides are easily removable and can be made in the home workshop.

The light car will serve many purposes of outapiary work. Often sixty to seventy-five empty supers may be carried to the yard at a time, making it unnecessary to take out a larger car.

Some beekeepers are using the light car almost exclusively, hauling their honey with large capacity hired trucks to save expense and upkeep. Just now that works nicely, with truck owners anxious for jobs.

In Praise of the Humble Sumac

By Wendell T. Card
Pennsylvania

A YEAR or so ago I saw an article about Allen Latham's apiaries in which mention was made of the fact that sumac provided shade in some of his queen mating yards. My small apiary is shaded by this same humble shrub and I want to say a few good words for it.

In the first place few shrubs or trees one can plant will grow as rapidly as sumac. A small root is tall enough in 3 years to provide shade for all but the tallest hives. After that all the lower limbs may be trimmed off leaving the main stems to support a graceful canopy of leaves nicely above the head of the operator and with a minimum of interference to vision or operations. Breezes circulate freely under this canopy which is a decided advantage in extremely hot weather.

The sumac is not a dense grower and the leaves push out very late in the spring. The net result is a highly desirable condition "in this locality." The scraggly branches offer almost no obstruction to the warm rays of the sun all through the spring up to early summer. About the time the sun's heat becomes burdensome the handsome lacy fronds push out and furnish just the degree of shade desirable for the comfort of man and bee.

A little later the golden blossom clusters provide a wealth of nectar for about ten days. I am not positive of the quality of this honey but it is a light honey and apparently not of strong enough taste to be conspicuous in the blending of other honey gathered while the sumac blooms.

A few leaves stripped from a stray shoot make an ideal bee brush—while they last. Used on combs of honey they are rather quickly bedraggled but where it is desirable to get a few bees out of the way with a minimum of disturbance I know of nothing so gentle and yet so effective.

Any swarm clustering on a sumac bough is within comparatively easy reach—which cannot be said of all shade trees.

Recently I saw an advertisement offering the dried seed clusters or "bobs" of the sumac for smoker fuel. I have never tried them but shall be interested to do so. Should they prove valuable that will be another "talking point." I do know the older shrubs when cut down make excellent kindling; firing about like white pine.

The wood is light green with a rather coarse but pretty grain. While it is worthless for lumber in the ordinary sense, I commend its unusual appearance to any of the brotherhood who delight in turning out candle-sticks, smoking stands and such trinkets for their friends.

If you have desirable natural shade for your hives you are fortunate. If you must plant something and want it quick, cheap and satisfactory, I urge you to consider that humble citizen of the hedgerows, the common sumac.

A Surprising Result in Requeening a Laying-Worker Colony

By R. C. Neuman
Ohio

We all know the difficulty of requeening a colony of laying workers, but I think I can put all laying workers on the job, especially if they all act like the one I am to tell about.

In July, I was asked to take an outdoor colony from a house. The bees persisted in getting upstairs and annoying everybody. After the removal the bees were taken to an outyard and given ten frames of foundation, but, alas, her ladyship had drowned in her own lifeblood when the combs were dropped into a box. The bees were therefore given a comb of brood from another colony. After queen-cells built on this brood were a week old, a colony was found in which supersedure had started. The old queen of this colony was still active, so I took her for my newly hived outdoor colony, running her in. She was accepted.

In due time she was superseded and the new queen laid nicely for two weeks. Then I ran across a colony that had been made as an artificial swarm the last week in June and lost its virgin. The brood had all emerged and there were drones in worker-cells from laying workers in three combs and about two pounds of bees.

Not caring for the old queen in the newly hived outdoor colony, and ready to experiment, I used this same queen and ran her into the laying worker colony without any plan of introduction.

On my next weekly visit I was due for a surprise. That queen had been accepted and had a nice patch of brood; and the biggest surprise of all, the drones laid by the laying workers which had previously been capped were being uncapped and taken from their cells and removed from the hive.

Has anyone else had an experience like it? This colony has kept on with its queen, introduced in the way just described, and will make an excellent colony for winter.

Using the Rauchfuss System

Harry Pease, Shenandoah, Iowa, points out two of the three top mating chambers, in a regular shallow super. Entrances as shown and three supers to the colony, placed right above the usual brood nest, with excluders to shut off the queen below. Here are mating quarters for nine or more cells to the hive. It's a compact arrangement.

In Defense of Clarifying Honey

By T. W. Brand
Nebraska

Dillon voiced strenuous objections to the plan of Lothrop and Paine for clearing honey of its cloudiness. Here W. T. Brand tells us the results he has obtained by such a process. He strikes one significant note—Give the public what they want and what they will buy.

I HAVE just finished reading the article by Gordon P. Dillon on page 161 of the May issue. As my name has been mentioned, may I have a little space to defend clarified honey; to tell why I do it and what the result has been, as I see it?

In the spring of 1900 I rode a bicycle seven miles to do my first day's work in a bee yard. I will never forget that day or the trip home. They were a cross lot of ugly bees; both of my eyes swelled shut and I had to walk home hanging to a piece of strap that another boy was kind enough to lead me with—some trip.

I have been in the game ever since, except four years (during the war) when I had a different job. During these years I have had quite a bit of experience preparing honey for the consumer. During my "teens" I had a great ambition to become an Electric Engineer, I soon found out that such a career required brains, so I was relegated to be a beeman to the end, but the little knowledge that I did get of electricity has been a big help in devising ways and means in the honey room.

In my contacts selling honey at the back door I found a great many people who claimed they could not eat honey; some had to have it boiled and the "scum" skimmed off, others had various ways of preparing honey before they could eat it. I spent a good deal of time trying to find the "WHY" of this.

In the winter months of 1919 I had access to a laboratory where I tried to take honey apart and see what was inside of it. I found that by diluting honey ½ with distilled water, filtering it, and evaporating out the water under a vacuum I could supply a honey that could be eaten by any one without bad after-effects. Between then and 1931 I ruined many a ton of honey trying to produce the same result on a commercial scale and do it cheaply. Finally I did make a device that took eight thousands pounds of honey from the extractors in seven hours and twenty minutes at a cost of about 16 cents for electric power and a little personal attention. But the next day we extracted, it gave us a lot of trouble, so I will not try to describe the device.

However, the honey was beautiful to behold. It mirrored the bottom of the pail. When packed in glass it sold to a trade that seldom or ever bought honey. Two farmer boys sold over one hundred thousand pounds in a very small area in less than one hundred days. I got a good many letters from that territory telling me that "Grandma" or some other relative could eat my honey. I also got some of the most abusive letters you ever read telling how my "honey peddlers" had spoiled a good honey market, such letters are very disheartening.

If we would all clarify our honey we could not begin to supply the demand. It looks clean. It tastes clean and it appeals to the eye. But the time is not yet. We have too many beekeepers that are so much wiser than you and I; some that are too independent to cooperate with us; a few like to tell the world what they should have and will have to take, like it or not; **and only a few that believe in giving the public what they want and are willing to pay for.**

In the meantime I will clarify most of my honey and feel security in the fact that I can run my competitors' muddy honey out of town should the necessity arrive. I hope that the clarifying of honey is ridiculed to death, it will give me a larger field to play in, and less competition.

I have tried selling it to the back door, the small store, the large store, and the car-lot buyer of packaged honey, and its sale is a howling success. My pails are filled and labeled without being touched with the naked hand. I tell my customer, "nice clean honey in a nice clean pail," and the price—'nuff sed!

Now may I add a bit of advice to some of the boys that are so bitter against CLEAN honey. Why not keep one's foot on the soft, soft pedal until you know what you are talking about, for my part, my hat is off to Lothrop and Paine.

Propolis, from Buds

Have you not made an inadvertent error in your statement on page 98 that propolis is gathered from the sap of trees? I think the definition given in Pellett's "American Honey Plants" that "Propolis is a resinous gum gathered by the bees from buds of trees" is much nearer the truth.

Propolis is gathered from a great variety of plants and varies greatly in color, tenacity, hardness and other respects, according to the source from which it is gathered.

The most abundant yielder of propolis with which I am familiar is the Carolina Poplar. We have some very large trees of this species on our place and at times the ground beneath these trees will be liberally sprinkled with flakes of this gum which is secreted at the base of the buds.

These flakes, which may be readily gathered up, prove to have the same characteristics as propolis which has been stored by the bees in the hives, showing that the bees simply gather and store propolis, not changing it in any way.

J. A. Green,
Colorado.

[Yes, propolis is a gum gathered from resinous trees, such as mentioned in that article, especially, as you say, from the poplar. But after all, it is produced by the sap of the trees, so our reply was not much out of the way, for popolis is not manufactured by the bees. But your answer is perhaps a little more explicit.—Editor.]

Chapel Beehive

This interesting little structure in the form of a chapel is in reality a beehive made by a Swiss beekeeper. The bees go in and out through a slit under the front door. The roof with the steeple is removable like the cover of a box.

Mrs. E. R. Adamson,
New Jersey.

Using Second-Hand Cans

R. B. Manley
England

This is a question that is continually cropping up. After all, it is a matter of whether it pays to purchase new cans each year and throw away the old ones. To buy second-hand cans must, one would think, always be a mistake, for new ones are not very expensive, and when a producers sells his honey in cans there can be no doubt that it is best to use new ones—preferably lacquered.

When the honey is sold to retailers in glass bottles, however, it is a little different, for the bulk is stored in cans and melted and bottled as required. Now in this case the beekeeper may save quite a considerable amount by using the old cans, provided that he knows how to keep them from becoming stained or rusted inside.

For many years the writer used to have a rule that no can should ever be used a second time, because it was found that, no matter how carefully washing and drying was done, there was always some discolored matter in the seams at the bottom.

Of late years this difficulty has been entirely overcome by the very simple means of not attempting to wash at all at the time the cans are emptied. As soon as the contents have been emptied out, the cans are closed tightly and stored away until wanted next year. When they are opened they are usually found to be perfectly clean and sweet, with a little film of honey at the bottom and the sides just sticky with enough honey to prevent any rusting. In most cases, if the rim at the top is carefully wiped, the cans may be filled up with new honey right away. If, however, there is a discoloration of the honey at the bottom, they may be washed out with hot water, and then, if immediately filled with honey those cans will be found to be as good as new ones.

It is the washing when emptied that causes all the trouble. Honey preserves the tinplate, water causes it to rust, and combining with any small film of honey that is left in the folds at the bottoms of the cans, produces a black liquid. But when no water is used and the can just left as it is, even should the film of honey turn black, it will when washed, come out as bright as it was when new and if filled at once any slight dampness will be absorbed and cause no trouble.

If it be wished to keep the outsides of the cans bright, this can be largely achieved by wrapping them in paper. But it is not empty cans that are so liable to rust outside as full ones as these remain cold for a long time when temperatures rise, inducing much condensation on them. Even this can be greatly reduced by wrapping in paper.

But, nowadays, lacquered cans are so cheap that it is foolish to have any others. In England lacquered cans can be gotten for a little over half a cent per pound of honey contained in the larger sizes.

The Martial Spirit of Bees

Bees observe a martial spirit in all their carriage; some keep guard at the gates, others like scouts watch at a remote distance; some within the hive, as soldiers in garrison, observe who goes in and out; so though that many follow their labors at home and abroad, yet others are warlikely employed, lest they should suffer from an unknown or unsuspected adversary, for want of foresight and preparation. (From an early writer.)

W. H. Hull,
Virginia.

Sainfoin Seed

The John A. Salzer Company of Lacrosse, Wisconsin, have sainfoin seed in their 1933 catalog at 40 cents per pound postpaid. I planted some in 1930, but it does not seem to do well here. Maybe because of not having the right innoculation. It never grew more than a foot high and there were no bees on it.

Frank W. Ireland,
Michigan.

[The same source of seed is reported by Alex Yannaccone, Minersville, Pa.—Ed.]

Pretty Manitoba Apiary

THIS picture was taken in July 1931. The apiary contains 139 hives set in a native bush one mile east of Plumas, Manitoba. They produced 21,000 pounds of extracted honey that year.

Our honey comes from white sweet clover, which produces a wonderful white honey. This year (1933) we will increase to 150 hives. If we get a season with more moisture, expect to get a better average.

I find that wintered over colonies start off better in the spring than packages; produce more honey for me. In 1929 I had four wintered over colonies that extracted 2250 pounds or an average of 550 pounds per hive. The more hives one has in the yard, the less the average is. This year I expect to split up in smaller yards; probably two yards of 75 colonies each.

W. H. Belton,
Manitoba.

Wasps Fierce Toward Aliens; Welcome Strangers of Their Own Species

Wasps have a strong racial feeling. They will welcome strangers belonging to their own species, even though they come from nests many miles away. But if a strange wasp of a different species alights on the nest it means instant battle.

This in outline gives the results of experiments on wasps in a number of nests which Phil Rau, of Kirkwood, Missouri, hung up in his third-floor laboratory and studied in greater intimacy than most of us would want to bestow on the slim-waisted "hot-tails." Mr. Rau's data will be given in detail in a forthcoming issue of the Journal of Comparative Psychology.

Mr. Rau's collection contained three species of the genus **Polistes.** He found that in general if an insect of a given species was transferred to a nest of the same species it would either be welcomed by a committee of the "home folks" or at the very least be let tolerantly alone, to make itself at home if it chose. Sometimes a stranger wasp would become a permanent member of its host colony.

A wounded wasp introduced into a strange colony of its own species would frequently receive apparently solicitous attention from its sister insects. They would lick its injuries and massage its body and wings.

As an extreme case, Mr. Rau pinned to one nest a dead wasp of the "right" species which had been kept for several years in a museum case in an atmosphere saturated with creosote vapor. Most of the wasps paid no attention to the mummy. A few made mildly hostile gestures and then became indifferent. But one determined female apparently had opinions of her own about the strange-smelling intruder, for she attacked it furiously and was not content until she had bitten off both its wings. Then she retired and treated herself to a most elaborate and lengthy toilet.

When a wasp was placed in a colony of a different species there was no friendly welcome nor even an indifferent toleration. Everybody was up in arms at once and the stranger usually got very short shrift unless he were lucky enough to escape. The intruder would instantly become the center of a mass of struggling, biting, sting-thrusting insects.

Their hostility was just as great against the dead body of an alien as it was against a living insect. The same mummified, creosote-flavored wasp that roused the antagonism of only a single individual in a nest of its own species produced a general riot when it was pinned on the nest of either of the two other species.—Science Service.

from the Little Blue Kitchen

MY GARDEN ON THE FOURTH

Out in my garden
I see as I write
Roses of crimson,
Lilies of white
While glowing near by them,
In harmony true,
Is lovely delphinium's
Beautiful blue.

Out in my garden
Spreads 'neath my eyes,
Thus, the tri-color
American's prize.
Each rose is the hue of
Brave soldier-blood spilled—
Each lily as white as
The purpose distilled
In patriot-hearts in
The days long gone by.
While delphinium's blue
Stands for aims true and high.

Out in my garden
This Fourth of July
There's a flutter of flags
There are troops going by;
Out in my garden
Are wonderful things—
Sweet Peace riding high on
A honey bee's wings—
And bird songs that seem
Glorious anthems to tell
Once more the glad news of
Old Liberty Bell!

Lida Keck-Wiggins.

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PERHAPS even with the "New Deal" well on its way, some of Blue Kitchen readers have not as yet "sold out" their excess production of honey. If so, why not use it up on delicious mid-summer desserts and other foods in the daily menus? This way beemen's wives may save tremendously on sugar bills; provide more healthful desserts, and have extra money for the truly lovely summer clothes now in vogue.

This is merely a suggestion in passing from Honey Lady to her Blue Kitchen readers, but to make it practical, let's all step out into Blue Kitchen lab for a few moments and see what's been set down on the list of desirables for summer honey use.

Honey Lady has left her blue kitchen in Ohio for a while and is obliged to use another kitchen for her tryouts . . . a kitchen overlooking a gorgeous expanse of Westchester County, N. Y., landscape . . . but this makes not a whit of difference in her interest in honey-things, or in trying out delicious dainties to be suggested to her Blue Kitchen friends.

Honey Lady's sister, however, in whose kitchen she may now try out her honey concoctions is herself a past grand mistress in cookery and has helped a lot this month.

Whatever cold drink is used at a party, or for any purpose in summer time, may be sweetened acceptably with honey, and indeed this hearts-of-flowers sweetening adds a delicate flavor all its own to lemon, orange or pineapple ades, or any other soft drinks, made at home.

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Honey cookies "go" nicely with any sort of cold dessert. A friend gave Honey Lady a recipe which is worked out as follows will fill a cookie jar with toothsome cakes. Honey Lady's only "extra" suggestion being that said cookie jar be placed on the top shelf of any pantry where there are boys large or small in the offing. Well here 'tis.

Lillian's Honey Cookies

3 teaspoonfuls soda dissolved in 2 cups warmed honey
1 cup lard, well salted; or butter, which HAS salt in it
2 teaspoonfuls of ginger
1 cup hot water
Flour sufficient to roll.

And here's the "how" of making very dainty cakes to serve with ices of any kind, or at afternoon tea. In summer ice-tea is made doubly delicious, incidentally, by squeezing a bit of honey over each slice of lemon offered one's guests, and of course if desired, a hostess may have a small pitcher of honey on the tray, or table, and ask guests if they would like to try sweetening their tea with honey. But to the recipe for the cakes or wafers to be served with the tea or other cold drink of summer afternoons. Uncle Sam's labs concocted this one and Blue Kitchen has very successfully proved it out. It's called "Rolled Wafers No. 1," and Honey Lady is giving also "Rolled Wafers No. 2," so that Blue Kitchen cooks may have a choice between two perfectly enchanting little honey-wafer recipes.

Rolled Honey-Wafers No. 1

¼ cup butter
¾ cup honey
⅞ cup flour
¼ teaspoonful powdered cardamon or aniseed.

Blend butter and honey; add flour into which the spice has been sifted. Spread out very thin with a long-bladed knife or spatula on a buttered, inverted dripping pan, or on tins made for cookie baking. Mark off in 3-inch squares and bake in a slow oven until delicately brown. While warm, roll into tubular shape and hold until they cool, and if necessary, until they harden into shape.

Rolled Honey-Wafers No. 2

¼ cup honey
¼ cup sugar
¼ cup butter
⅞ cup flour
1/6 cup milk
¼ teaspoon cardamon or aniseed

Cream the butter; add the sugar, honey and flour in the order named, and the milk very gradually. Cook as rolled honey-wafers No. 1.

Honey Lady is giving this choice as the wafers made with some sugar are bit more tender than those with honey alone. Still, if it is desired to economize in the beekeeper's kitchens by using all-honey recipes the first of these recipes will serve very well, and the result is exceedingly good to look at and to eat.

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Perhaps you have a few long-keeping apples on hand, wine saps maybe, and you'd like to use them up in some dainty way as an economy measure. If so, make some frozen apple sauce one of these sizzling July days, and see what the family says. Here's how Honey Lady was "told" to do it.

Frozen Apple Sauce

Wipe, pare, core and cut ten apples into quarters. Cook with a few grains of salt, 1 half cup of honey (granulated will work very well) and 1½ cups of water. Rub through a sieve; add 2/3 cup of cider and 2 tablespoons of lemon juice. Freeze to a mush and serve in dainty dessert dishes. Adding two or three ripe berries of some kind available makes a prettier dessert.

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Don't forget that when baking with honey the oven should be kept at a moderate temperature. Otherwise the delicate flower-flavor is destroyed.

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Remember our little friend the bee is not only proverbially busy and about his Master's business, but he is always looking for, and hence FINDING, sweet things. Some folks have a perfect genius for discovering the sweet in every blossom of life; others look for WORMS, and they FIND 'em, you just bet they do! But who wants a worm once found, tell me that!

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Our Lord is spoken of as having had a meal one time of fish and wild honey. Wouldn't that make a fairly good supper combination for a modern table? Try it. You'll be surprised!

This Year in Georgia

By F. M. Baldwin
Georgia

THE Atlantic Coastal Highway stretches from New York through Philadelphia, Baltimore, Washington, Charleston, Savannah and Jacksonville to Miami and beyond. It crosses the Attamaha River, (the Altama of Goldsmith's "Deserted Village") at Darien at which place three beekeepers make their headquarters.

We are in the great coastal plain, full of swamps and vast stretches of flat woods. The swamps are usually good bee pasture, but were far from their usual form last year. This coast suffered from a protracted drought during the winter of 1931 and the spring of 1932. The swamps dried up and the forest fires swept through them, cleaning up the bushes and vines of the whole section.

Mr. Wilder, our biggest beekeeper, failed to get enough nectar to keep his bees alive and his report is a fifty per cent loss. Mr. York reports damage in the territory in which his bees are located that will not be repaired in years. York is up the river from us, 40 miles as the crow flies. Wilder's locations are around the Okefenokee Swamp and along the classic Suwanee River well down into Florida.

The Okefenokee is fifty miles north and south, and 35 miles across at its widest part. These men, therefore, give us a disaster that came to a widely extended section. Further west, clear across Georgia at its southwest corner, the Flint and the Chattahoochee join to form the Appalachicola River along which bees usually gather carloads of tupelo honey. It yielded not a drop in 1932. A freeze in March did the damage and there was no nectar.

Along the lower reaches of the Altamaha, we fared better and made twenty per cent of a crop and thirty per cent increase. An increase which is usually made in September on a fall flow. The honey was not up to standard but we were thankful for it. Anything beats nothing at all.

Mr. Wilder writes very gloomily about the season (1933) but we are getting a bumper crop of fine quality. The combs are sealed from top to bottom, the color is light, body heavy, flavor fine. The honey is thoroughly ripe and will not granulate. We can pack all the chunk and bulk honey we care to with the certainty that it will not granulate in years.

In our home yard, we have about 130 colonies, getting a very satisfactory yield. It is the Greenwood yard, 5 miles up the river, that is breaking the record. It is impossible to over stock that location in the spring. It would probably do well as a rival to Alexander's famous yard of 700 colonies. It is surrounded by Chisholm and Briardam Swamps which have

Piling them up in Georgia.

many thousand acres of black gum and tupelo and gallberry. The latter yields for two to three weeks and we have never had a better prospect for Gallberry in spite of the fires of last season. It has sprung up everywhere and the rains have kept down the forest fires that generally rob us of this fine source of nectar.

We commonly pack in 5-pound pails, three pieces of comb as large as the mouth of the bucket will admit and filled up with our best extracted. The pack is all right for at least six months, then we begin to have trouble with granulation. This time the honey is tupelo of best quality and will not granulate.

Drizzled Rice Dessert

Cooked Rice Bananas Honey

Use properly cooked rice that has been cooled. Make layer of rice not thicker than one-half inch. Drizzle warm honey over rice layer (about three tablespoonfuls honey to layer of rice, assuming layer is not greater than cup of rice would cover). Cover with sliced bananas and drizzle honey over these; repeat with layer of rice, drizzling of honey, layer of bananas and drizzling of honey. Chill at least one hour and serve with honeyed whipped cream. This dish may also be baked and served hot with honey fruit sauce or hard sauce.

Facts About the Small Mating Hive

By Jay Smith
Indiana

ON page 148 of the April number, Editor Pellett says "One thing Jay Smith overlooked in his article on the small mating hive (page 125) is the matter of temperature. —When weather is uncertain, temperature changes can hardly be controlled by such a small cluster of bees."

Excuse me, Mr. Pellett, if I appear sarcastic, but I do not mean to be. Every beekeeper should be searching for truth and I am perfectly willing to contradict anything I have stated as soon as I believe I have been in the wrong. In adopting and becoming a champion of the small mating hive, I am taking exactly the opposite position from what I advocated twenty years ago so I speak of the small mating hive just as I have found it to be.

It does not matter a penny to me whether anyone else takes to it or not. I only wish to tell exactly what it is so it may be of help to other beekeepers. It has a fault and that is if the bees are not fed a few spoonfuls of syrup twice or three times a week, when no nectar is coming in, the bees are apt to abscond.

That is the only serious objection to the small mating hive that I can see and it is overcome by feeding. The point which you raise about the control of temperature is purely imaginary and if you were to use the small mating hives a few seasons, you would find it true.

In running 800 of these baby nuclei for four seasons, I have never seen a single case where they were inferior as far as being able to keep up the temperature was concerned.

Good, well fed, long-lived queens cannot be reared in cold weather in any kind of hive because the bees cannot gather pollen properly to feed the larvae. When it is warm enough for that, a half pint of bees on three tiny frames will form a compact cluster and incubate queen cells and worker brood just as they do in a full colony.

When the cell is not properly incubated, the queen will be darker. I used to be troubled in that way when I used a mating hive with two Jumbo frames when I tried to rear queens during too cold weather. I have not seen a single case since using the small nucleus.

This small cluster will give fully as good incubation as two pounds of bees will do in a five-frame hive. When I had these little hives made, I had a slide to close the ventilator in cool weather. I never found it necessary to close it so took it out and fastened a small cleat above the ventilator to keep out rain.

Another possible objection to the small hive is that it is not so good where it is desired to test a queen or to keep queens on hand for any length of time. It can be done by putting on a second story as we do in our yards to some extent but when I wish to test out a queen, I prefer the five-frame Jumbo hive.

Now against these two objections to the small mating hive, we have several advantages. In the first place, one-third the cost for syrup; one-third the cost in labor and less than one-third the cost in bees and the first cost of the hive. Less than one-third in the trouble and labor in moving them around.

In hot weather, if a large number of the small mating nuclei are needed, they can be carried into the basement with little trouble while if the large ones were used, there would not be room. Another big advantage when quality queens is considered, as I have proved many times, is the following: When shipping out queens, they should not be laying to any great extent. Let us suppose one is using a two-frame standard mating hive or larger. When the queen is mated and begins to lay, it will be necessary to leave her in the hive till she has stocked it well with eggs and larvae or the mating hive will become weak in bees, resulting in poor incubation.

If the queen is left in till the frames are well filled with eggs and larvae, she is so large because of the number of eggs in the process of development that she is in no condition to be put into a cage and bumped about in the mail. This sudden stopping of heavy egg production often ruins a queen and she will never regain her former prolificness.

Years ago, before I knew this, I sent out breeding queens that were laying to capacity and keeping a large hive jammed with brood. The customer frequently reported that queens would not keep more than two brood combs filled with brood and that many of them were superseded. After learning the cause, the remedy was easy. About four or five days before shipping a queen that was laying heavily, I took one frame of brood with the queen and bees and put her in another hive on a new spot.

Here the queen was allowed to lay and as the bees returned to their former location, the queen rapidly restricted her egg laying till she was small and could stand the journey through the mail as well as a newly mated queen. With our small mating hive, the queen is not permitted to get into heavy egg production and is not injured by being caged.

Cajaput-Tree for Honey

The Cajaput-Tree is of comparatively recent introduction into this country. It will stand slight frost so can be grown only in the warmer portions of Florida and perhaps of California. It was brought from Queensland, Australia, although it is found also in India.

The tree attains large size, a height of eighty feet and a diameter of as much as four feet. It is well adapted to swampy areas and will grow on land where eucalyptus will not live. The wood is said to be hard and close grained and to last indefinitely underground, hence is often used for piling, ship building and other uses where the wood remains in contact with water.

The leaves are the source of cajaput-oil which is similar to eucalyptus-oil. It is of interest to us as a source of honey. In Southern Florida the tree seems to be very much at home and is rapidly spreading in some localities.

Frank Stirling of Davy reports that it is the heaviest yielding source of nectar with which he is familiar. It blooms in early winter, usually in November and gives a six weeks' flow. In neighborhoods where the tree is common he reports an average yield of a shallow ten-frame super per colony per week during the flow. He describes the honey as amber in color, mild but distinct flavor, with considerable aroma. It candies quickly. The sample shown the writer met the above description fully and was of a quality which would grow in favor when available in quantity in the market.

There is every reason to believe that cajaput-tree will in time become an important source of nectar in South Florida as the area of its planting is extended.

Frank C. Pellett.

Humming Birds As Honey Gatherers

By Natt N. Dodge

Humming birds as honey gatherers, or rather as nectar sippers, are described by Mrs. Walter Finn in a short article in the August issue of Nature Notes from Rocky Mountain National Park. Mrs. Finn remarks upon the fact that hummingbirds, like bees, visit the nectar yielding plants for food. A large bed of thistles near her home attracted great numbers of both bees and humming birds. Perhaps it is just as well that humming birds are consumers of honey rather than storers of it, as beekeepers' overproduction problems might assume even greater proportions. As yet there seems little possibility that humming birds will seriously interfere with the nectar-gathering activities of honeybees.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

AN EARLY SWARM

(1) The Saturday before Palm Sunday, the day being nice and warm, a boy that lives in the vicinity of my "Hives" claims he saw a swarm of bees spread out on a big sycamore tree. Just as he started for my house they left. The sycamore stands 100 yards from my bees. Is a swarm at this time unusual? I examined my bees the day following not knowing of this swarm till a few days later. I merely looked to see how much honey was left in each hive and to see that each colony was strong and queenright.

ILLINOIS.

Answer.—(1) Yes, a swarm at this time is very unusual. If you did not miss any bees, if your colonies are still strong, it is quite probable that the bees this boy saw were flying about without swarming.

UNLIMITED HONEY

If a normal colony of bees is given access to an unlimited supply of honey, what will the final result be? Of course, no other bees to be in the vicinity and the hive always provided with plenty of room.

OKLAHOMA.

Answer.—I believe that if you feed a colony all the honey it will take, it will breed heavily and later will fill its combs so full that it will be unable to breed any longer. I have never tried what you mention. Have you?

MULTIPLE VIRGINS

(1) If more than one virgin queen accompanies an after swarm, how come that the one virgin hasn't killed the other virgin or virgins after they emerge from their cells and before the swarm issues.

(2) Does a drone help itself to honey out of the honey cells?

(3) In the May 1933 American Bee Journal, Cale speaks of making divisions on page 180. Does he take a frame of bees and brood from each of four colonies and put in one hive and then introduce a queen? When combs of bees and brood are thus taken from different colonies is there no fighting among the bees?

MINNESOTA.

Answer.—(1) Usually it is because the excitement of swarming is too great. Then too, the bees are apt to keep a queen from killing the others when they want to swarm.

(2) It may be that drones help themselves out of the honey in the hive when they are hungry but I have never seen them do it. I believe the bees feed them.

(3) Yes, he takes brood and bees from several colonies to make divisions. There is very little danger of their fighting, because they are all young bees, but if there should be any danger it is easy to make them gentle, by giving them plenty of food. Try it.

A BEEKEEPER'S WHEELBARROW?

Is the wheelbarrow, which we use so much, a beekeeper's invention, or did the beekeepers just borrow and adopt it?

Wouldn't the wheelbarrow be more suitable for a beekeeper if the dash or front, instead of inclining towards the wheel, stood at a right angle with the floor?

I have found that when wheeling cans or boxes stacked two high, if I hit a rock or rut, they shift forward to meet the dash and sometimes go on over. If they were fitting snug against the front, which they would be if the front formed a right angle with the floor, they wouldn't fall off so easily.

UTAH.

Answer.—Your suggestion is all right. We do not keep wheelbarrows for sale to beekeepers, but we believe that it will be a good plan to suggest this idea. Perhaps some of the makers of those wheelbarrows for beekeepers will take notice.

HANDLING HONEY

I am engaged in the selling of honey direct to the consuming public in this city and wish to expand my operations in that direction. In order to better equip myself, I wish to learn more about the product (honey), its proper handling, care and merits.

It is appalling how little the general public seems to know about honey. The average person seems to only recognize honey as some sort of sweet sticky syrup that you put on hot cakes. Few seem to realize that honey is a peculiar natural product gathered from floral nectar by bees, and that it has little in common with man made (manufactured) syrups. It is this lack of discrimination that makes it possible for those having little concern for the quality honey producer, to place before the public common syrups, and "bargains" (?) (in metal containers) in honey (???) using inferior grades of honey, honey dew and other concoctions in competition with fine pure honey.

I should like to see a more vigorous campaign of public education about honey, its peculiar merits and uses launched in order to counteract this destructive competition. Any suggestions you can offer will be very welcome.

WASHINGTON.

Answer.—We can readily comprehend your difficulties because we rub against the same trouble ourselves.

What we need is a greater union among beekeepers so as to show a better working force against the lack of knowledge of the consumers.

Let our beekeepers realize what the trouble is and unite to fight it.

LAYING WORKERS

(1) When the workers of a queenless colony begin to lay will they accept a queen introduced the ordinary way?

(2) Do laying workers develop a large abdomen?

Some of my layers seem to be abnormally large.

OKLAHOMA.

Answer.—(1) A drone-laying worker colony is less apt to accept a queen than a colony which is just queenless. But they sometimes accept one. It is a good plan to give them a lot of brood as you give them the queen and to keep the queen caged for three or four days.

(2) I have not noticed that drone-laying workers developed a larger abdomen than the others. But if you notice such drone-laying workers, it will be a good plan to kill them, as they may perhaps be considered as queens.

As a rule we have practiced uniting colonies of drone-laying workers with healthy colonies and in this way have had a more regular success in queen introduction.

REARING QUEENS AT HOME

I am a beginner in beekeeping. I have 18 hives at present. I would like to have your suggestion on rearing some queens of my own. I have the Black bee. I would like to requeen with Italian queens but I have not the money for I am crippled and am not able to work much. Was paralyzed in my limbs. Would also like to know when to kill the old queen when giving

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American Bee Journal
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They are easily handled, enter the supers readily, seldom swarm, and cap their combs a solid white.
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8 or more, 30c ea.
1 or 2, 35c ea.; 3 to 7, 33c ea.

Package Bee Prices on Page 226 in June Issue.

Our "Honey Girl" Italians are known in all parts of the country and our customers praise them very highly.

From Turloch, Calif. — "about the queen you sent me last year beg to state she proved a dandy with beautiful uniformly marked bees. The County Bee Inspector was here the other day and bought her for a breeder. I hated to let her go but as cash is very hard to get these days, I let her go at a fair price. I want to get 5 selected untested queens." —W. A. Holmberg.

From Washington, D. C.—"On the 8th of April you sent me nuclei, and I want to tell you how much I like them. They are just wonderful."—Nelson E. Brown.

From Ontario, Canada — "Your shipment of 25 queens arrived today, delighted with their condition and quality. The queens I got from you last year, all did remarkably well, sincere congratulations on your strain of Italians. Please send 20 more."—D. Palmer.

Large enough to serve you promptly, yet small enough to give your order personal attention. Service—Quality—Satisfaction.

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CAUCASIANS

have all the good traits of Italians, plus extra gentleness, less swarming, more prolific, longer tongues, less robbing and more dependable workers. Wintered here out of doors, and bred in a climate like their native land—severe winters, cold windy springs—thus insuring their good qualities. Breeders from Prov. Terek, Caucasus.

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Prolific at all times, very gentle, best of winterers, build up rapidly during the changeable weather of spring, build beautifully white combs, and most excellent workers. One customer reports an average of 435 lbs. per colony, extracted, spring count, for the whole yard of over 50 colonies. Have supplied many state Agricultural Colleges and Experiment Stations in U. S. and Canada with them. My own and Jan Strgar imported strain.

Prices both races:

1 untested queen	$ .50
6 untested queens,	2.75
12 untested queens	5.00
Tested queens, each,	1.00
Breeders, (1932 reared)	5.00

Both these races give better results in northern and western sections of our country where the flow comes early. Use some Caucasians or Carniolans among your Italians, both will improve your Italians in gentleness and honey gathering. These times necessitate your using the most dependable bees as well as efficient management.

Albert G. Hann
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THE BEEKEEPERS ITEM

The Southern beekeeper's own magazine, but read by honey-producers everywhere. Combined with the American Bee Journal makes a combination that covers the beekeeping field.

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C. G. Ellison :: Belton, S. C.

a ripe queen cell. And how to fasten a ripe queen cell on a frame of brood?

When is the best time to requeen as I plan?

The main honeyflow starts about June first. ILLINOIS.

Answer.—If you wish to rear Italian queens, you must have at least one queen to rear your queen cells.

Buy a good queen, then kill a black queen and put this one in her place, keeping her caged 48 hours in the center of the brood chamber. Then, when you want to rear young queens, remove this queen and place her in another hive, or else take some of her young brood, less than three days old and put it in a new hive with plenty of young worker bees, to rear queens. If you can afford to buy a few artificial queen cells the bees will rear a greater number. At the end of 9 days, count how many queen cells you have that are sealed and kill as many of your black queens as you have queen cells to spare.

These cells you will insert in each hive on the afternoon of the tenth day. As a rule, if the job is well done the bees will not rear any other queen cells.

Of course the bees must have plenty to eat, to do a good job. So I recommend that you do not rear queen cells until the honey crop begins.

A ripe queen cell is introduced into the combs by cutting a V-shaped opening in the comb of brood, and inserting the cell in that opening as near the center as possible.

You had better buy a book on queen-rearing, it will cost you 50 cents or a dollar and will be worth while.

FASTENING FOUNDATION IN SECTIONS

(1) What's the proper way to fasten foundation in a section? Do you use a full sheet or a small piece, say one inch, as a starter at bottom and then fasten a larger piece at top leaving an opening about one inch? Can't a full sheet be used just as well?

(2) For making chunk honey does one fasten the foundation at all four sides or just at the top? PENNSYLVANIA.

Answer.—The C. C. Miller way to fasten foundation in sections is as you describe, a wide piece in the upper part of the section and a narrow piece at the bottom, leaving a half inch or so, between, to take up the sagging if the bees load it too heavily before it is fully built. When a full sheet is used there is occasion for sagging.

(2) Some people fasten the foundation at all four sides, but if the sheet is wide enough to fill the space, there is great probability that the bees will fasten it without any trouble to the beekeeper.

HOW MANY BEES?

(1) If a man decided to do nothing else, how many Hives could one man handle after he learned the business?

(2) Does Buckwheat increase the honeyflow? I have heard it is good for bees. How many acres would you sow to the number of hives? Could Buckwheat be sown several times during the summer that is sown so it will be several ages and come in bloom several times during the summer?
TEXAS.

Answer.—(1) A man of ordinary ability ought to be able to handle 500 to 600 colonies of bees located in a half dozen apiaries. He could not well keep as many as he could manage in a single spot, because there would not be enough pasture in reach of the bees.

(2) Buckwheat is a good honey plant but produces rather dark and strong honey. You may sow it several times during the summer but it is not advisable because you may get better honey which would be lessened in quality by the presence of the buckwheat. But it would be all right to sow it at two different times.

A 4H Club Project in Beekeeping

By Vincent Peifer
Illinois

AFTER attending the short course at the University of Illinois this winter, I was made to feel that there is still much to be learned in beekeeping. I am sending this to you to show what beekeeping has meant to a boy in school. All over the country boys and girls are becoming more interested in farm and home work, an enthusiasm probably due to the work of the 4H club organization.

Girls and boys choose different projects—calves, hogs, poultry, gardening, orcharding and a few boys choose a bee project. I think the bee project is a very desirable one and I do not know why more do not choose it.

When I first entered high school the agriculture instructor asked me to choose a project and I chose beekeeping. The start was made with two colonies. That fall and winter the bees were cared for the best I knew and although I knew very little, I succeeded in managing them.

It was a good winter and spring and the bees came through in good condition that year (1928). The spring started off early, brood rearing was good and had made a good start before the early honeyflow. The colonies gave one prime swarm each. The value of the old and new colonies at $5.00 each made an investment of $20.00.

All records were carefully kept during the project, stating exactly every observation. There were also records on the number of hours spent in observing and caring for them, the amount of expense and, at the close, the returns or credits were recorded.

For the first year (1928) starting with October 22nd for the fall management and closing August 12th, the following summary is given.

Summary of Project

Total number of stands	4
Total production	216 pounds
Value and amount sold	$40.56
Increase in inventory	$10.00
Total	$50.56
Cost of production—labor cost	$1.65
Feed cost	(nothing)
Bee Supplies	$8.10
Total	$9.75

Total profit	$40.81
Personal labor	$ 1.65
Income	$42.46

Cost per unit ____ $ .04 per pound

The figures are just for my small project of two colonies. Other boys can do the same thing and it is easy to increase your project. Honey prices then were good but material and labor costs were high. Now they are low. You can make just as much headway today as you could in 1928. The experience is worth while.

Dealer in Diversified Honeys

By C. M. Litteljohn
Washington

Honey from the orange groves of California, from the clover and firewood of the Pacific Northwest, or the slopes and summits of Central American mountains—these are dealt over the counter in bulk at the interesting "liquiteria" in Seattle.

Customers bring their own containers for the favorite honey of their family table to the little liquid shop with its five and ten gallon containers, its barrels and firkins, its tin and glass receptacles from which the liquid goods are poured.

There in the Security Market of Seattle, the attractively smocked attendant satisfies the brisk demand for the California gathered honey, the home honey of the state of Washington, or the exclusive and more expensive honey which comes from far-off Guatemala to satisfy a cultivated Seattle palate among the honey connoisseurs of that city.

He pours out the desired quantity of the special honey of the discriminating for those bringing family receptacles, their own glass jars or bottles, or serves his clientele and host of return-customers with conveniently bottled honey in pints, half-pints and quarts—with a few cents extra for the bottle, if no container is brought along.

An oasis for the honey-eater is the "liquid" spot in the lower level of the Security Market of the city, close to the Fourth avenue entrance, with its steady stream of market shoppers daily. Through the popular "Liquiteria" many different honeys in various clear and dark amber colors are distributed in the plain glass bottles. Public taste is furthered in these products by the convenient method of drawing off just the right quantity in bulk of the favorite delicacy. Tastes differ in honey, just as the taste of bees differ in the selection of bloom, and the distribution of various kinds of honey in liquid, or bulk form, extends honey popularity and widens the market for several different varieties.

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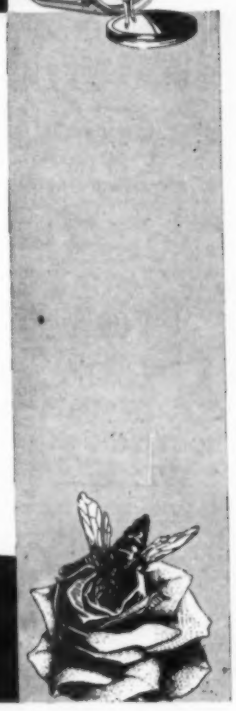

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About the Changes in Nectar Concentration Between the Flower and the Hive

I have read with much interest and profit the study of Mr. O. W. Park about the changes in nectar concentration which occur between the flower and the hive (Research Bulletin No. 151 April, 1932, Ames, Iowa), from which it appears that the changes of concentration of nectar or syrup between the flower and the hive, is a decrease instead of an increase, as has been assumed by many heretofore.

Most judicious also the explanation of this decrease of concentration. The most plausible explanation, says Mr. Park, seems to be that such dilution may be the result of the addition of secretion from certain salivary glands, which contain one or more enzymes which are essential to the inversion of the complex sugars of nectar (or sucrose of syrup).

I should however have a single remark to make to Mr. Park. He would have made the **honey-proof,** for instance, to put in feeders, honey in place of syrup, and especially honey as old as possible so that it would contain as little as possible sucrose to see what will happen if the bees do not have to transform sucrose, r had to transform very little. Then, does the dilution take place still?

This would be the proof whether the dilution of nectar in the honey sac proceeds really from the enzymes which are essential to the inversion, or from another cause.

So Mr. Park would have had the occasion to experiment his hypothesis about the reason of the dilution.

N. G. Eremie,
Braila, Rumania.

A New French Bee Book

There has recently come to our office, a paper bound copy of a new French bee book entitled "J'apprends L'apiculture" (I Learn Beekeeping). The author of the book is Mr. E. Alphandery well known editor of the French bee magazine "Gazette Apicole."

The book contains 90 illustrations and 185 pages and as its name signifies, is for the beginning beekeeper, giving him inside information as to beekeeping as a profession, beehives, natural history of the bees and general manipulation and operation of the beehive and the bee colony.

The book is published by the celebrated Gauthier-Villars, book publishing firm of Paris and the price is 15 francs or approximately 65 cents American money.

Coming from an editor with the experience of Mr. Alphandery, the book is authoritative.

ADVERTISING PAGES REMOVED

Crop and Market Report

Compiled by M. G. Dadant

For our July Crop and Market Report, we asked reporters to answer the following questions:

1. How is the crop of honey so far compared to 1932?
2. What are the prospects for balance of year?
3. Is comb honey production decreasing?
4. How much old honey left on hand?

Crop So Far

At the time this is being written, of course it is too early in many sections of the country to give a report on the honey crop which has been harvested as in the northern region it is still "in the making."

However, the southern half of the country has harvested its first crop and the central portions are in the midst of their honeyflow.

The early flows on the Atlantic seaboard have been very satisfactory, at least as much as last year. The later flows in Maryland have not materialized but in the Carolinas they have been satisfatory.

Georgia and Florida report excellent early flows which is entirely the opposite of last year which was a failure. The later flows will probably be sufficient to give the bees enough to go through the winter.

In the states of Alabama and Mississippi, the honeyflow has been very light and in some places it is a question as to whether the bees will gather sufficient to carry them through the winter. In Tennessee and Kentucky, the honeyflow is about normal.

Louisiana will not have quite as much honey as last year and Texas particularly in the southern section is very much disappointed owing to a heavy shortage in the earlier flows. East Texas and the north central cotton producing regions seem to be having at least normal conditions. In Arizona and New Mexico, the early flow has been just about normal with the sweet clover still to come in New Mexico.

California produced probably as much orange honey as last year but the dry weather has cut down materially on the sage and other desert flora. The total crop will hardly be equal to last year and in the northern section the crop has been a disappointment.

Throughout the central section, the white clover flow probably started earlier than it has in many years and promised to be extremely good. The colonies in many instances were not in condition to store a surplus from the earliest part of the clover flow but in many others where the bees had been "boosted up," the returns from clover began coming in immediately.

Prospects

In this connection the white clover producing areas are just now at this date (June 22) wondering what the outcome is going to be on account of the prolonged drought following the wet spell earlier in the season. The wet spell did put the pastures and the clover plants in the finest condition but more than two weeks of very hot dry weather has dried many of the clover blooms. Bees are still producing satisfactorily but the honey crop is going to be cut very short if rain does not come immediately.

Kansas and Nebraska are reporting unusually early and fine conditions but the drought has cut in. It has similarly been very destructive in South Dakota and in parts of North Dakota where also there is a damage from the grasshoppers just being reported. Minnesota has recovered from its drought one and two years ago and is anticipating desirable crops this year unless the weather interferes. Wisconsin and Michigan undoubtedly will have better crops than a year ago and the prospects in Michigan are particularly alluring. Ohio, Indiana and Pennsylvania are similarly suffering from drought like the rest of the white clover region and we believe that bees were probably not in as good condition to take advantage of the early part of the crop as they were farther west.

New York reports conflicting conditions, some sections there being a desirable honey crop and in others only mediocre. Again the dry weather is apt to interfere as it is also in the New England states. It all depends upon what happens by the time this magazine reaches our readers.

Is Comb Honey Decreasing?

Practically unanimously all reporters stated that comb honey was decreasing in production in their section. There were a few contrary opinions, particularly on the part of some comb honey producers who had a desirable market and were going to continue to furnish it.

We believe, however, that on the whole the production of comb honey is going to be considerably less this year, or at least there will be less comb honey producers. However, if the honeyflow in the white clover region materializes, perhaps the total amount of comb honey raised will equal last year.

Bee supply dealers report considerable quantity of orders for shallow frames for comb honey supers and also quantities of bee comb foundation for bulk comb honey which undoubtedly is displacing to some extent at least the pound section. Whether it will meet with the ready market anticipated remains to be seen.

Old Honey on Hand

Never in the experience of the writer with the crop and market page which extends over a number of years, have we had a less amount of honey reported on hand than this year. Practically every reporter stated that there was not more than 2 to 5 per cent of honey left on hand and in many instances, none at all. The honey still on hand appears to be in the hands of large beekeepers who are wanting to get a better price and are holding until they do get a better price. As a matter of fact during the month of June there has been a decided increase in demand for honey and a tendency on the part of buyers to pay a bigger price in order to get the honey they needed to carry them through until the new crop.

Summary

All in all, it does not appear like the crop of honey this year is going to be as large as had been anticipated a little earlier particularly on account of the drought which has cut in on many sections and on account of the slowness with which bees got into honey producing condition on account of the cooler weather earlier.

Such an addition in crop as there might be over last year is going to be offset by small carryover.

There is a tendency on the part of the jobbers and wholesalers of honey to buy whereas previously the tendency had been to hold off and get honey only as absolutely required. Undoubtedly the advancing markets are having considerable to do with this.

We Are Cash Buyers of Honey and Beeswax
Submit samples, and best prices, freight prepaid
Cincinnati. We also furnish cans and cases.
Fred W. Muth Co. Pearl and Walnut Cincinnati, Ohio

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Write for Our Special Club Offers
AMERICAN BEE JOURNAL

Edwin H. Guertin 201 N. Wells St. Chicago
Buy and Sell All Grades Extracted Honey
References: 1st National Bank, R. G. Dun or Bradstreets Commercial Reports.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

50 CENTS each for Italian queens that produce the true 3-band leather colored bees. Inspected and guaranteed. Queens shipped in my own, popular introducing cage. Write for prices on quantities.
J. F. Diemer, Liberty, Mo.

THREE BANDED ITALIAN QUEENS that produce good workers and gentle to work with. Satisfaction guaranteed.
Alamance Bee Co., Graham, N. C.

ITALIAN QUEENS, 50c. Bees, 2-lb., $1.90. 3-lb., $2.40. Orchard package 3 frames, $3.50, equal 6 lbs. Will trade for honey. Reduced price May 20. Homer W. Richard, 1411 Champnolle, El Dorado, Ark.

GOLDEN Italian queens that produce good workers and gentle to handle. Satisfaction guaranteed. Select tested, $1.50. Tested, $1.00. Untested well worth 75c, now for 50c.
D. T. Gaster, R. No. 2, Randleman, N. C.

CAUCASIAN queens, northern raised from Bolling strain. 60c each, 10 or more, 50c each. June delivery.
Nishna Valley Apiaries, Shenandoah, Iowa.

RUSCHILL'S Iobred Italian Queens, 50 cents each. Chas. L. Ruschill, Colfax, Iowa.

GOLDEN Italian queens, 30 cents each, any quantity. Good honey producers and gentle. A. M. Kelly, Bell, Florida.

CARNIOLAN and golden queens. Tested, 75c; untested, 50c. Bees 50c per pound.
C. B. Bankston, Buffalo, Texas.

FOR SALE—Pure Italian queens, red clover kind. 35c each. 3 for $1.00.
Graydon Bros., Route 2, Greenville, Alabama.

GOLDEN Italian Queens, noted for their gentleness and honey gathering. One, 50c; 6, $2.75; 12, $4.50. Satisfaction guaranteed in U. S. and Canada. Health certificate with each queen. E. A. Simmons Apiaries, Greenville, Alabama.

CAUCASIAN QUEENS from Bird's Apiaries that are Caucasian. Northern, gentle, honey go-getters. No longer any excuse for poor crops. My, what a difference good Caucasians make. Select untested, 60c.
Odeboldt, Iowa.

QUEENS, QUEENS—Pure bred Italians, 40c each. Tested 80c each. They are sure to please you. Quality, service, complete satisfaction assured. Let us supply your needs.
Honey Bee Apiaries, Sandwich, Ill.

GOOD QUEENS for Summer and Fall Requeening. Gentle, productive, three-banded Italians. The kind you like to work with. Select young laying queens 35c each; three, $1.00; ten to one hundred, 30c each. Prompt shipment. Safe arrival guaranteed. No disease. We have one of the largest, best equipped queen rearing apiaries in the South. Accredited by the Alabama Dept. of Agriculture. H. C. Short, Fitzpatrick, Ala.

HARDY Northern Italian Queens, 30 years' experience, personally reared, honest dealing, prompt service. Send C. O. D. Reared on full sized combs, one, 35c, three for $1.00.
N. J. Smith, Coopersville, Mich.

GOLDEN Italian Queens, balance of season, 35c each. Safe arrival and satisfaction guaranteed. Write for prices on June packages. E. F. Day, Honoraville, Alabama.

SWARTS golden queens produce golden bees. Highest quality. One, 65c; six, $3.50.
D. L. Swarts, Lancaster, Ohio.

HONEY FOR SALE

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Ill.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

TUPELO honey; will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Illinois.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

FOR SALE—Well ripened, extracted honey gathered from clover, carlot or otherwise. Will be pleased to submit sample on request. Also section or shallow frame comb honey in local shipment. Colorado Honey Producers' Association, Denver, Colo.

BASSWOOD HONEY—$3.00 per 60-lb. can.
Henry Price, Elizabeth, Illinois.

HOWDY'S HONEY—New crop will be ready for shipment this month. Extracted in sixties and No. 1 Comb.
Howard Potter, Jr., Ithaca, Michigan.

OAKVALE APIRARIES—New clover comb honey. Forrest Dygert, Hammond, N. Y.

HONEY FOR SALE—Fine, white clover honey in 60-lb. cans. Write for prices.
A. G. Kuersten, Burlington, Iowa.

HONEY AND BEESWAX WANTED

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Hamilton, Wallace & Bryant, Los Angeles.

WANTED—HONEY and BEESWAX. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

FOR SALE

FOR SALE—Used once sixty pound tins and cases. Schultz Honey Company, Ripon, Wisconsin.

WRITE FOR BARGAIN PRICE on tin and glass honey containers, comb honey cartons, with and without cellophane windows. Comb honey wrappers, both plain and printed. Rettig Supply Co., Wabash, Ind.

BARGAIN LIST—Extractors, brushes, smokers, veils, box seats, feeders, section presses, shipping cases, bulletin boards, covers, excluders, frames, etc. Every item in good, usable condition. Priced to sell quickly. Reason for selling, no longer listed in our catalog. Stocked at various points. Write for free list. G. B. Lewis Company, Watertown, Wisconsin.

USED HONEY CANS and cases in exchange for honey. Will buy carlot extracted.
Sherman Whitney, Puyallup, Wash.

BRAND NEW LEWIS-MARKLE four-frame extractor, $27.50. Sterling Johnson, Lovell, Wyo.

SUPPLIES

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

FOR SALE—Comb foundation. Note these new low prices on 100-lb. lots: Medium Brood, 35c; Thin Section, 43c. Also wired foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

SAVE queens. Safin cages now 15c. Ten for $1.00. Allen Latham, Norwichtown, Connecticut.

THE PINARD NAILLESS queen shipping cage. 810 Auzerias Ave., San Jose, Calif.

MISCELLANEOUS

PLANS FOR POULTRY HOUSES — All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

Illinois Sweet Clover

According to figures gleaned from the Reports of the Illinois Crop Reporting Service, the acreage of sweet clover in Illinois has been increasing by leaps and bounds. For 1919, only 48,000 acres are reported; in 1925, a total of 342,000; 1926 — 517,000; while in 1931 the figure is listed as 856,000 acres. These conditions certainly have had a vast influence on Illinois honey production, and have tended to make yields somewhat more uniform from year to year than in the absence of sweet clover. Besides, sweet clover has held a prominent place in the building up of the soil fertility of Illinois farms.

V. G. Milum,
Illinois.

MEETINGS AND EVENTS

Ohio Summer Meeting, Aug. 11-12.

The Ohio Beekeepers' summer meeting has been tentatively scheduled for August 11 and 12th at some point on Lake Erie. A program including Bee talks and opportunity for bathing, boating and fishing is being arranged. A camping site will be available. Full details of the meeting will be announced soon.

W. E. Dunham,
Sec. Ohio Beekeepers' Association,
Columbus, Ohio.

Kansas Federation—July 23

The Kansas Federation of Beekeepers Association will have their annual meeting July 23rd. They will be the guests of the Coffey County Beekeepers and will hold the meeting in Kelley Park on U. S. 75, Burlington, Kansas. There will be speakers from all over the state, also from Missouri and Oklahoma. Roundtable talks will be held in the morning and election of officers will he held at eleven o'clock. The officers will be elected by a group of delegates representing the various Associations over the state. We want beekeepers from all over the state to attend. Basket dinner at noon. Kathleen Williams,
Kansas Federation Secretary.

Mini-Cassia

The Mini-Cassia Honey Producers' Association members met at Heyburn, Idaho recently to discuss a drive against the poison sego weed. It was decided to send a sample of the weed to the department of plant biology at Washington for analysis. Frank Beach explained methods of feeding syrup to wintering bees by filling the comb frames with a mixture of water and honey. The honey was reduced with an equal volume of water and the solution boiled half an hour to destroy foulbrood infection. This method was pronounced better than feeding with a tub of syrup in the open. G. P.

Missouri State Fair, Aug. 12-19

A notice of the premium for the apiary exhibit of the Missouri State Fair is at hand. The fair this year will be held from August 12 to 19 and the judge in the apiary department is to be Prof. F. B. Paddock at Ames, Iowa.

Honey Waffle and Pancake Syrup

¼ cup brown sugar ¼ cup honey
½ cup water 1 tablesp. butter

Prepare as follows: Mix brown sugar and water together. Boil three minutes, then add honey. Simmer 3 minutes, then add one tablespoon of butter. Also delicious as a spread for bread. Mix with nuts as a sauce for ice cream.

DEPRESSION PRICES
on Berry's Reliable Bees

	2-lb. Size	3-lb. Size	4-lb. Size
1 to 11 Packages with Select Queens, Ea.,	**$2.00;**	**Ea., $2.50;**	**Ea., $3.00**
12 to 24 Packages with Select Queens, Ea.,	**$1.75;**	**Ea., $2.25;**	**Ea., $2.75**
25 to 49 Packages with Select Queens, Ea.,	**$1.65;**	**Ea., $2.15;**	**Ea., $2.65**
50 and up, Packages with Sel. Queens, Ea.,	**$1.50;**	**Ea., $2.00;**	**Ea., $2.50**

After May 15th, 25c each package less. After May 25th, 50c a package less off all listed prices. Queenless packages 25c off all prices.

Packages **overweight** with **young baby bees** ready for work. **There is nothing that pays quite so well as the addition of a few of these young bees to your colonies at the opening of a honeyflow.**

Untested, select, warranted purely mated Italian queens 65c each. After May 25th, 50c each; 3 for $1.25; and 100 for $35.00. When wanted, wings of queens are clipped free of charge. All of our queens in packages or otherwise are of selected quality. **The culls we destroy.**

No disease. Health Certificate accompanies all shipments.

M. C. BERRY & CO.

Box 697 Montgomery, Alabama U. S. A.

Notice

Don't delay longer. Your colonies need a good queen to assure you a honey crop. We feel that we can give you what you need.

Our queens are produced on standard frames, on natural honeyflow and from high producing stock; the results of years of selection.

PUREST ITALIAN STOCK
Write for prices.

Louisiana Southern Bee Farm, R. 2, Baton Rouge, La.

The
"WHIRL DRY" CAPPINGS DRIER

will dry your cappings as they fall from the knife. The picture shows the new large size machine, which is made to dry the cappings when using our 50-frame extractor, or other large machines.

For further particulars write to

S. P. HODGSON & SONS
New Westminster, British Columbia, Canada

PACKAGE BEES AND QUEENS

SUPERIOR ITALIAN STOCK AT SUMMER PRICES

2-lb. Package Bees with Queen $1.25
3-lb. Package Bees with Queen 1.75

Select Young Laying Queens, 35c each
ANY NUMBER

We ship fresh from our yards and are prepared to give prompt and efficient service.

CITRONELLE BEE CO., Inc., CITRONELLE, ALA.

Extra Yellow Italian Queens
Health Certificate and Satisfaction Insured

Over fifteen years a breeder. Prices, 1 to 11, 60c ea.; 12 to 23, 50c ea.; 24 to 36, 40c ea.; over 36, 35c ea. Tested, $1.15 each.

HAZEL V. BONKEMEYER
Route 2 Randleman, N. C.

SEASON MAY 15 TO OCT 15
1 TO 5 QUEENS 60¢ EACH
6 OR MORE 50¢ EACH
"SHE-SUITS-ME" ITALIAN QUEENS
Allen Latham
NORWICHTOWN CONN
LINE-BRED THREE-BANDERS

We are Cash Buyers of Honey and Beeswax
Submit samples and best prices, freight prepaid Cincinnati
We also furnish cans and cases.
The Fred. W. Muth Co. PEARL & WALNUT CINCINNATI, O.

GET RUNNING'S QUEENS —THEY SATISFY AND GET HONEY

The kind WE use in our extensive Michigan Apiaries where WE produce honey by the carload.

Accredited and certified ITALIAN stock, bred for honey-getting and gentleness.

Price—One, 40c; 3 for $1; 100 for $33.

QUICK SERVICE
DAVID RUNNING
SUMTERVILLE, ALABAMA

Hilbert Method CUT COMB HONEY

Write for our new catalog which will include free, full information on Cut Comb Honey.
James E. Hilbert, Traverse City, Mich.

MACK'S QUEENS

Are reared to possess Quality. Seventeen years' experience enable us to rear queens to suit the most Particular beekeeper. They will compare with any queens on the market Regardless of price. Our customers tell us so. A trial order will convince you where to get your future queens. ENTIRE SATISFACTION GUARANTEED.
50c each; 6, $2.85; Dozen, $5.40.

Herman McConnell
(The Bee & Honey Man)
ROBINSON, Route 2, ILLINOIS

When Writing Advertisers Mention The American Bee Journal

What Is in a Name?

By Chas. Hofmaster
Oklahoma

FOULBROOD is the most serious affliction of bees and there is a good deal of publicity about it. I voice a loud and indignant protest against the continual use in bee literature and in published articles of that loathsome and disreputable name —"foulbrood."

If beekeepers were the only ones concerned, it would be a little matter. We are used to the word foulbrood and know all about it (or should) and our esthetic sense is thoroughly calloused against its psychological aspect, but we must consider the general public.

Mr. General Public, although he buys and likes honey, generally knows and cares little about bees and the business of beekeeping. Occasionally he may read something about it but he probably forgets what he reads except such fantastic bunk as the recurring story of the inaccessible Texas cave inhabited by a swarm of bees for a generation or more, and believed to have accumulated at least forty tons of honey.

However, there are two items among the common bee lore which never fail to cause Mr. General Public to pause and pucker his brow. They are "feeding" and foulbrood." Both arouse his suspicion as a honey consumer.

This is not guess work. I speak from experience. Feeding makes Mr. General Public think of adulteration and we must admit it does not take much stretch of his imagination to misconstruct our meaning as a seemingly practical means to—er—"accelerate honey production."

Foulbrood (and only on account of that unfortunate name) makes Mr. General Public suspicious of a possible taint. It is said that the disease is really very plainly and correctively named. —True enough. That is the whole trouble with it.

Some will say, "What's the matter with the name anyhow?" Well, let us consult the dictionary. Here we find the word "foul" described as "rotten, filthy, putrid, dirty, vile, stinking, corrupted, unsound, unclean, tainted, etc."—a whole string of repulsive, stomach-upsetting definitions. It is no wonder that many a honey lover looks askance at the honey pitcher, or many a housewife substitutes maple syrup on her grocery list.

American people are fastidious eaters, the least inkling of possible uncleanliness will induce them to forego any article of food. We do not need to worry about foulbrood getting plenty of publicity. Being such a menace to beekeeping, it necessitates and justifies special legislation, inspection and publicity of all sorts. Mr. General Public consequently will not infrequently read, even in his small town paper, about foulbrood or foulbrood inspectors, foulbrood condemnations, foulbrood burnings, until he is nauseated. He may not want honey any more for a long time to come.

Why do we beekeepers cling with such tenacity to such a noxious term? It might have been comparatively harmless in the past, but in this age of high pressure commercialism with high voltage publicity it is absolutely inexcusable. We must bear in mind that Mr. General Public is uninformed about the real facts, very susceptible to first impressions, and, being human, inclined to prejudice and suspicion.

Also we must not forget that our platform of defense is standing on extremely weak props. We have to admit the widespread prevalence of the disease. We have to admit the loathsome character of it. We have to admit the presence of the germs of it in honey. After all, it takes some tall talking to convince Mr. G. P. that the honey is still "perfectly wholesome."

So, what is in a name? A name can be plain or fancy, poetic or ridiculous, romantic or grotesque, pleasing or repulsive. The name is the identity of the thing for which it stands and it reflects its character.

Any manufacturer of a new and popular article is willing to give a fortune for a good name. He knows it to be a great asset. Stage people know the psychological effect of a name because they study and understand human nature. You never will find a Hezekiah Pumpkinseed on the billboard.

Now honey is a dainty food, a fancy article, one of the delights and glories of the dining room table, and bee men must positively avoid anything which will hurt this universal esteem.

There are other bee diseases of less importance. Take for instance Nosema. Mr. General Public will read about it but it won't interest him, and he will consider it one of the troubles concerning beekeepers and not of any interest to him. He will shrug his shoulders and promptly forget. Why? The name does not suggest anything.

The word "foulbrood" at the least leaves a bad taste in everybody's mouth. The two varieties of disease are given the distinguished and big sounding names of "American" and "European" respectively although they are ranked misnomers. To cap the climax, I have noticed there are some enthusiasts trying to correct the mistaken names by suggesting the substitution of more descriptive

words like "ropy" and "stinking." The horrid idea! The present atrocities are bad enough but the suggested names "ropy foulbrood" and "stinking foulbrood" are positively sufficient to cause even a case hardened stomach to burst into violent eruptions.

To give a last parable: a pitchfork handle put into soft hands will invariably raise blisters. If put into seasoned and calloused hands, it has no effect. Now the disputed name, foulbrood, has no effect on us seasoned bee men but Mr. General Public, like the man with soft hands, will get blisters and never forget them and he is the gentleman to whom we offer our honey for sale.

The remedy is simple as falling off the proverbial log. Just get another name! We do not mean to misrepresent or hide anything detrimental to customers, but to get rid of an offensive and suggestive name to keep Mr. General Public from false conclusions which may spoil his appetite for honey.

If I may be allowed a suggestion, I would say, let some competent parties, perchance the bee experts at Washington, pick a new name. Perhaps a Greek or a Latin version of the present abomination. Preferably a bland, fairly easy pronounceable word and then let the literature adopt it.

Presto, the trick is done! To us bee men the new name may look odd, but not for long. The point is when Mr. General Public reads it, it will suggest nothing to him. He will consider it only one of the troubles of beekeepers, shrug his shoulders and promptly forget it. Let us purge our literature of such an uncouth and detestable word as "foulbrood."

[Call it "Bacillus larvae" and be done with it.—Ed.]

May Soon Ask for Tube of Chocolate

According to a report from the New England Collapsible Tube Company of New London, Connecticut, chocolate will soon be sold in paste form in collapsible tubes. A contract has been entered into to furnish tubes for that purpose to a chocolate manufacturer.

And why not? We now have honey in tubes and in certain markets it seems to sell readily. We may soon have a whole line of food products which can be squeezed out at will from collapsible tubes. Is this in the direction of the "dinner pill" presaged by those who draw on their fancy to depict our future habits and customs?

QUEENS 25c **"DIAMOND"** *Bright Italians* For 5 or less QUEENS . . . **30c ea.** **QUEENS 25c**

Our queens are reared on honey through both natural honeyflow and feeding.

Scientifically reared for PRODUCTIVENESS and GENTLENESS. Replace your "soldiering" bees with our "DIAMOND" queens, or compare their performances with any others. That will tell the tale.

IF PACKAGE BEES WANTED
Please Write for Price

Health certificates furnished. Service, quality guaranteed.

GARON BEE CO. -:- Donaldsonville, La.

HONEY CONTAINERS

2½-lb. Cans, per carton of 100	$3.50
5-lb. Pails, per carton of 50	2.90
5-lb. Pails, per carton of 100	5.75
10-lb. Pails, per carton of 50	4.40
10-lb. Pails, per carton of 100	8.75
5-gal. Square Cans, two in a case, per case	.95
5-gal. Square Cans, two in a case, 50 or more	.90
Offered for shipment either from Reedsville, Wisconsin or Maywood, Ill.	
½-lb. Glass Jars, per case of 24	.70
1-lb. Glass Jars, per case of 24	.90
2-lb. Glass Jars, per case of 12	.65
SHIPPING CASES	
Single Tier—Clear Basswood, Glass Fronts	
For 12 Sections 4¼x4¼x1⅞, per 10	$2.00
For 24 Sections 4¼x4¼x1½, per 10	2.30
For 24 Sections 4x5x1⅛, per 10	2.30
For 24 Sections 4¼x4¼x1⅞, per 10	2.50
Double Tier	
For 24 Sections 4¼x4¼x1⅞, per 10	2.65
CORRUGATED PAPER SHIPPING CASES	
For 24 Sections 4¼x4¼x1⅞, per 10	$1.65
For 24 Sections 4¼x4¼x1½, per 10	1.50
For 24 Sections 4x5x1⅛, per 10	1.50

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The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Another letter from J. F. Diemer adds further information concerning the behavior of bees toward queen cells mentioned in last month's postscript. Diemer writes that he never claimed that bees open all cells when the inmates are dead but he does claim that the bees (workers) never open a cell at the side, and that they never destroy a cell unless the inmate is dead. He contends that the holes in the sides of empty queen cells are usually gnawed by virgins which have just emerged from them.

If any of the queen breeders have observed contrary behavior I hope that they will let me know about it so that I can start an argument with Diemer.

— : —

A sample of very fine honey came from J. O. Moore of Lexington, Missouri in May. It is very light in color and has a mild and pleasing flavor. The question is what can be yielding honey of this quality so early in the season. He reports a considerable quantity coming in.

I can think of nothing but fruit bloom which might be the source but it is lighter in color and of rather better flavor than the samples of apple honey which I have tasted. Who knows what plum honey is like? If anybody knows what this honey is likely to be coming from the information will be appreciated.

If beekeepers who observe the bees working on unusual plants will tell us about the kind of honey, amount stored and any other information they may have it will be helpful to many others. So much remains to be learned about the minor honey plants that there should be a revival of interest in observations of this kind.

— : —

I have just visited a basswood which has been occupied by a swarm of bees for many years. The hole which served them as an entrance for so long has been entirely closed by the growth of the tree. What happened to the bees is an interesting question. Were they finally imprisoned and smothered?

— : —

Does anybody know what strawberry honey is like? I have long been interested in the question as to how much honey comes from that plant. This is written in late May just after a visit to the strawberry patch in full bloom. There is a heavy set of fruit on the Premier and the blooms are nearly gone. Not a bee can be seen on the flowers still open.

The Dunlap is at the height of its bloom and hundreds of bees are busy going from flower to flower. Most of them appear to be gathering pollen although they also seem to be searching for nectar. Apparently the yield of nectar is scant and few bees carried large balls of pollen. In most cases the pollen baskets were but partly loaded with dirty grey pollen about the color of propolis. It may well be that the bees are important in pollination of the strawberry while getting but a scant yield of honey.

— : —

At the same time the Virginia Waterleaf is in full bloom in my wild flower preserve. The bees fairly swarm over it and seem to be getting a liberal reward. This wild flower once abundant in the woodlands is getting scarce in this region and can never again be important to the bees. In pioneer days when the wild flowers were present in large acreage it seems probable that the Virginia waterleaf might have been the source of honey in surplus quantity.

— : —

My brother Elmer and his team of horses were badly stung by a stray swarm of bees. He was riding a disk and the first he knew of the bees he was surrounded with a cloud of them which began stinging him and the horses viciously. After a wild ride across the field he stopped the team at the gate only to lose his sight and the use of his legs so that he could not have reached the house without help. Fortunately the ill effects soon passed but such incidents remind us that there is an element of real danger where bees are kept.

— : —

Here at the farm the first week in June, there have been several thousand peony blossoms open at one time. It has been a wonderful show for a flower lover but a bit disappointing to a beekeeper. When there are so many flowers one feels that the bees should be busy. Here and there a stray bee gathering pollen reminds one that the bees have little use for unfruitful blossoms such as those of the peony.

— : —

In years gone by the name of Hy W. Sanders appeared frequently in the bee magazines. Sanders was writing from western Canada at the time when bees were a novelty on the western plains and the public was astonished at the stories of big honey yields from sweet clover in the northwest. Now Sanders' name appears with equal frequency in the financial publications. Perhaps he has lost interest in the bees since he has moved to sunny California. Now he writes about banking and finance, a subject which would interest all of us if we still had any use for a bank.

— : —

As this is written, the first week in June, there is a fine honeyflow on from white (Dutch) clover. Sixty miles west at Council Bluffs on the loess soil, John Jessup reports nothing from white clover, but honey coming from yellow sweet clover. Today I have driven across two or three counties and was unable to decide where the change in soil makes the difference between a flow and no flow from white clover. The loess soil seems to be the finest for sweet clover but Jessup contends that the Dutch clover seldom yields much for him. The observer who is looking for an unlimited field for original observation can find it in a study of the honey plants.

— : —

While the weather has been so wet at Hamilton that farmers could not get their crops planted, here at the farm it has been unusually dry and our berry crop has suffered grieviously because of drouth. Last year it was equally wet here while little farther north the fields were burning up. Nature has a way of disposing of the farm surplus at frequent intervals.

— : —

For several days there were numerous bees about our back porch and then suddenly a swarm appeared and started to enter a cavity under the roof. It reminded me of the endless discussion some years ago as to whether bees send out scouts in advance of swarming. It certainly looked like they did in this case.

— : —

At this season stray swarms are numerous and most anybody you meet has some kind of bee story to tell. A few days ago when returning from town in my car I drove through a passing swarm. The incident offered but little excitement to a beekeeper but those who are unfamiliar with the insects regard it as a great adventure. Sometimes such persons meet with serious consequences as not infrequently the driver loses control of the car through fear of the bees.

— : —

Yesterday I had a caller, an old time beeman who said that he had kept bees nearly all his life. He complained that the bees would not swarm this year although he did his best to make them do so. Instead of swarming he reports that they are making plenty of honey.

— : —

I wonder what E. G. Carr thought when he read in the June Journal that his photograph had been identified as Jay Smith, Mel Pritchard and myself. Perhaps he would like to get the bunch together and look them over again to see whether he is as good looking as he is reputed to be.

FRANK C. PELLETT.

Our Honey Crop and Market Service

As we go to press, we have the announcement through the press that the Department of Agriculture at Washington is to discontinue its crop and market service there and its branches in the different states. No doubt the honey crop and reporting service is similarly jeopardized.

Two or three years ago plans were made to discontinue this service for beekeepers, but prompt action resulted in the service being retained.

No one can doubt but that this service under the efficient Mr. Harold J. Clay has been of real service to beekeepers. It has always been a mystery to us that it was not more generally appreciated.

But now comes the test. An appeal by the American Bee Journal, and the other bee magazines and bee supply dealers in themselves will carry little weight, and should carry but little weight unless backed by strong and quick action on the part of the individual beekeeper, who should profit most by such a service.

We appeal to our subscribers to write to the Department of Agriculture at Washington and to your elected representatives in congress on behalf of this service. Remember this has not been an expensive service to the government; no expensive branch state offices, no heavy outlay at Washington. One man, Mr. Clay, has done the job in connection with his other duties. Surely the beekeeping industry is still worth one man's time in getting for them efficient crop and price service.

Honey Bran Krumbles

Three quarts bran (Health bran may be used), two cups honey. Mix thoroughly, grease dripping pan with lard or butter, put in honey-bran mixture, place in oven at bread baking temperature, stir frequently as it burns easily, bake for half an hour, turn out on a cloth. When cool enough to handle, take up in hands, squeeze gently and let fall. This causes the bran to stick together in crumbles. Let stand until cold, when it will be dry and crisp. Store in muslin bags to retain its crispness. Serve with cream. This makes a delicious breakfast food and also is a fine remedy for constipation. Thos. Dildine,
Minnesota.

Honey Breakfast Toast

1 egg Pinch of salt
2 tablesps. of honey 1 cup of milk

Prepare as follows: Beat egg until light and add the other ingredients. Fry bread in hot butter until brown.

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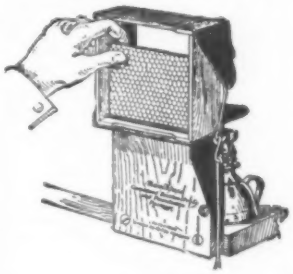

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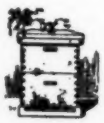

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